

4005 Port Chicago Highway  
Concord, California 94520



# **Temporary Accumulation Area 636A and 636B Marine Corps Air Station El Toro, California**

Contract No. N62474-98-D-2076 – Contract Task Order 0024  
DCN 4864, Revision 0 - November 6, 2002

---

## **Closure Report**

---

- Appendix A - Great Park Land Use Plan
- Appendix B - JEG RFA Background Information
- Appendix C - BNI VSI Evaluation Report
- Appendix D - Photo Log
- Appendix E - 1997 Site Assessment Log
- Appendix F - Land Survey Data
- Appendix G - Laboratory Analytical Report
- Appendix H - LDC Report

**CLOSURE REPORT  
TEMPORARY ACCUMULATION AREA 636A AND 636B  
MARINE CORPS AIR STATION  
EL TORO, CALIFORNIA**

**Environmental Remedial Action  
Contract No. N62474-98-D-2076  
Contract Task Order 0024**

**Document Control Number 4864  
Revision 0**

**November 6, 2002**

**Submitted to:**

**U.S. Department of the Navy  
Southwest Division  
Naval Facilities Engineering Command  
1220 Pacific Highway  
San Diego, California 92132-5190**

**Submitted by:**

**II Corporation  
4005 Port Chicago Highway  
Concord, California 94520-1120**

**CLOSURE REPORT  
TEMPORARY ACCUMULATION AREA 636A AND 636B  
MARINE CORPS AIR STATION  
EL TORO, CALIFORNIA**

**Environmental Remedial Action  
Contract No. N62474-98-D-2076  
Contract Task Order 0024**

**Document Control Number 4864  
Revision 0**

**November 6, 2002**

Prepared by:

Julie Dahl

Julie Dahl  
Environmental Scientist  
REA I

Date: 11/6/02

Approved by:

Dhananjay Rawal

Dhananjay Rawal, REM  
Project Manager

Date: 11/6/02

## **Table of Contents**

List of Figures .....	ii
List of Tables .....	ii
List of Appendices .....	ii
Abbreviations and Acronyms .....	iii
10      Introduction .....	1-1
1.1     Site Location and Background .....	1-1
1.2     Project Objectives .....	1-2
1.3     Regulatory Background and Cleanup Goals .....	1-2
1.4     Project Scope of Work .....	1-3
20      Previous Investigations and Site Background .....	2-1
21     RCRA Facility Assessment .....	2-1
30      Field Activities .....	3-1
3.1     Preparatory Work .....	3-1
3.2     Confirmation Soil Sampling .....	3-1
3.2.1     TAA 636A Confirmation Sampling .....	3-1
3.2.2     TAA 636B Confirmation Sampling .....	3-2
40      Sampling Analytical Results and Data Quality Assessment .....	4-1
4.1     Field Sampling Summary .....	4-1
4.1.1     Confirmation Soil Sampling .....	4-1
4.1.2     Quality Control .....	4-2
4.1.3     Equipment Decontamination .....	4-2
4.2     Analytical Methods .....	4-3
4.3     Laboratory Analytical Results .....	4-4
4.3.1     TAA 636A Soil Sample Analytical Results .....	4-4
4.3.2     TAA 636B Soil Sample Analytical Results .....	4-5
4.3.3     QC Sample Analytical Results .....	4-6
4.4     Data Quality Assessment .....	4-6
4.5     Data Validation .....	4-7
4.5.1     Analytical Quality Control Program – TAA 636A .....	4-7
4.5.2     Analytical Quality Control Program – TAA 636B .....	4-9
50      Risk Characterization and Hazard Index Calculation – TAA 636A .....	5-1
5.1     Physical Characteristics of TAA 636A .....	5-1
5.2     Exposure Assessment .....	5-1
5.3     Toxicity Assessment .....	5-2
5.4     Risk Characterization .....	5-2
60      Risk Characterization and Hazard Index Calculation – TAA 636B .....	6-1
6.1     Physical Characteristics of TAA 636B .....	6-1
6.2     Exposure Assessment .....	6-1
6.3     Toxicity Assessment .....	6-2
6.4     Risk Characterization .....	6-2
70      Conclusions and Recommendations .....	7-1
80      References .....	8-1

## ***List of Figures***

- Figure 1-1 Vicinity Map
- Figure 3-1 Site Map – TAAs 636A and 636B
- Figure 5-1 Conceptual Site Model – Former TAA 636A
- Figure 5-2 Potential Migration Pathways, Exposure Routes and Receptors – Former TAA 636A
- Figure 6-1 Conceptual Site Model – Former TAA 636B
- Figure 6-2 Potential Migration Pathways, Exposure Routes and Receptors – Former TAA 636B

## ***List of Tables***

- Table 4-1 Analytical Results for Soil Samples – TAA 636A and 636B
- Table 4-2 Analytical Results for QC Sample – TAAs 636A and 636B
- Table 5-1 Residential Risk Screening Worksheet for Soil – TAA 636A
- Table 5-2 Industrial Risk Screening Worksheet for Soil – TAA 636A
- Table 6-1 Residential Risk Screening Worksheet for Soil – TAA 636B
- Table 6-2 Industrial Risk Screening Worksheet for Soil – TAA 636B

## ***List of Appendices***

- Appendix A Great Park Land Use Plan
- Appendix B JEG RFA Background Information
- Appendix C BNI VSI Evaluation Report
- Appendix D Photo Log
- Appendix E 1997 Site Assessment Log
- Appendix F Land Survey Data
- Appendix G Laboratory Analytical Report
- Appendix H LDC Report

## ***Abbreviations and Acronyms***

BNI	Bechtel National Inc.
BRAC	Base Realignment and Closure
CA LUFT	California Leaking Underground Fuel Tank
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CRDL	contract required detection limit
DO	delivery order
DSA	drum storage area
DTSC	Department of Toxic Substances Control
EPA	United States Environmental Protection Agency
HI	hazard index
HSP	Health and Safety Plan
JEG	Jacobs Engineering Group Inc.
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LDC	Laboratory Data Consultants
m/z	mass-to-change
MCAS	Marine Corps Air Station
MDL	method detection limit
mg/kg	milligram per kilogram
MS	matrix spike
MSD	matrix spike duplicate
NFA	no further action
OHM	OHM Remediation Services Corp.
PR	preliminary review
PRG	Preliminary Remediation Goal
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RDL	reporting detection limit
RFA	RCRA facility assessment
RPD	relative percent difference
RRF	relative response factor
SIM	selected ion monitoring
SVOC	semi-volatile organic compound
SWDIV	Southwest Division Naval Facilities Engineering Command
SWMU	Solid Waste Management Unit
TAA	temporary accumulation area
ICL	target analyte compound
IPH	total petroleum hydrocarbons
VOC	volatile organic compound
VSI	Visual Site Inspection
%D	percent difference

## ***Abbreviations and Acronyms (Cont.)***

%R percent recovery  
µg/kg micrograms per kilogram

## **1.0 Introduction**

---

This closure report summarizes the confirmation soil sampling activities performed at Solid Waste Management Unit (SWMU) 160 at the Marine Corps Air Station (MCAS) El Toro (hereinafter referred to as the "Station"), California. IT Corporation (IT) performed the work for the Southwest Division Naval Facilities Engineering Command (SWDIV) under EFA West Contract No. N62474-98-D-2076, Contract Task Order (CTO) 24.

Soil Sampling activities were conducted in accordance with the Navy, Station, and Department of Toxic Substance Control (DTSC)-approved *Final Supplemental Work Plan, Closure of Various Temporary Accumulation Areas and RCRA Facility Assessment Sites, Marine Corps Air Station El Toro, California* (OHM, 1997a) and approved *Revised Addendum to the Draft Supplemental Work Plan, Marine Corps Air Station El Toro, California* (IT, 2002).

### **1.1 Site Location and Background**

The Station is located approximately 45 miles southeast of the city of Los Angeles in Orange County, California, 1 mile north of the intersection of Interstate 5 (Santa Ana) and Interstate 405 (San Diego) freeways. The Station covers approximately 4,738 acres. The location of SWMU 160 on the Station is shown in Figure 1-1. SWMU 160 is located in the southeast quadrant of the Station, south of Building 636, a former survival equipment shop.

On May 1, 1991, Jacobs Engineering Group (JEG) observed a hazardous waste storage area consisting of a sandbag berm with canvas liner as SWMU 160 during the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA). This unit has been designated TAA 636A in this report. Following JEG's site visit, a soil sampling visit was planned and implemented. TAA 636A was active until approximately 1991, and following 1991, wastes were stored at TAA 636B. One 60-foot angle boring, 160A1, was advanced at the nearby waste storage area that has been designated TAA 636B in this report. On December 5, 1994, as part of the RFA, Bechtel National Inc. (BNI) visited Building 636, and observed a waste storage area (TAA) that consisted of a concrete pad with berm, ramp and sump approximately 70 feet south of the building and approximately 50 feet north of TAA 636A.

The RFA site visits by JEG and BNI confirmed that there were two separate storage areas at Building 636 under SWMU 160. First the temporary sandbag berm with liner was used most likely until 1991 (also referred to as TAA 636A). A new permanent concrete pad structure was

built after 1991 to replace the old sandbag berm storage area and is also referred to as TAA 636B. A detailed discussion of JEG and BNI site visits is presented in Section 2.

The Station closed on 1 July 1999 in accordance with the Base Realignment and Closure Act of 1993 (BRAC III). Former TAAs 636A and 636B are located within a parcel designated for future use as drainage/wildlife corridor area according to the Great Park Land Use Plan that was issued by the City of Irvine in June 2002. The Great Park Land Use Plan is provided in Appendix A.

The depth to groundwater in the vicinity of the TAAs 636A and 636B site is based on available water level data collected from the nearest groundwater monitoring well 07\_DBMW100, located approximately 2500 feet west of TAAs 636A and 636B. Based on this data, the depth to the groundwater at TAAs 636A and 636B is approximately 98 feet below ground surface (CDM, 2002).

## **1.2 Project Objectives**

The objectives of this project were the following:

- Verify that all stored hazardous wastes, residues, and constituents that may pose a potential health risk have been removed from TAAs 636A and 636B in accordance with the MCAS El Toro Detailed Plan (IT, 2002).
- Perform verification soil sampling and analysis to obtain “closure status” of TAAs 636A and 636B.

## **1.3 Regulatory Background and Cleanup Goals**

The closure activities at TAAs 636A and 636B were completed in accordance with the appropriate federal and state requirements. TAA 636A and 636B is characterized as “*hazardous waste accumulation areas*” according to the Code of Federal Regulations (CFR), Title 40, Part 262.34, and the California Code of Regulations (CCR), Title 22, Section 66262.34. Because hazardous wastes have been stored at the site, closure of TAAs 636A and 636B is also subject to federal and state regulations for closure of less than 90 days hazardous waste management facilities (CFR 40, part 264, Subpart G; and CCR 22, Section 66264, Article 7, respectively).

The cleanup goals established for TAAs 636A and 636B are based on the following:

Soil

- United States Environmental Protection Agency (EPA) Region IX Preliminary Remediation Goals (PRGs) dated November 6, 2002 for residential land use for organic contaminants
- Background concentrations for metals contaminants (Bechtel National Inc. [BNI], 1996b)
- 5,000-milligrams per kilogram (mg/kg) concentration limit for total petroleum hydrocarbons (TPH)-purgeable
- 10,000-mg/kg concentration limit for TPH-extractable

#### **1.4 Project Scope of Work**

The Scope of Work at TAAs 636A and 636B consisted of the following tasks:

- Collection and laboratory analysis of confirmation samples, including soil samples obtained from beneath and adjacent to the TAA structure
- Disposal of solid wastes generated during field sampling activities
- Preparation of a closure report to describe and document the work performed.

## **2.0 Previous Investigations and Site Background**

---

The following section summarizes results from previous investigations and background history at the former TAAs 636A and 636B. Background information regarding former TAAs 636A and 636B was obtained from the following documents:

1. *Final RCRA Facility Assessment Report, Marine Corps Air Station El Toro, California (Jacobs Engineering Group Inc., [JEG] 1993)*
- 2 *Final Addendum RCRA Facility Assessment Report, Marine Corps Air Station El Toro, California (BNI, 1996a)*
3. *Final Base Realignment and Closure Business Plan, May, 2002, Marine Corps Air Station El Toro, California (SWDIV, 2002).*

### **2.1 RCRA Facility Assessment**

In 1991, JEG, as part of the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA), performed a Preliminary Review (PR) and a Visual Site Inspection (VSI) of the 307 SWMUs within the Station. JEG also conducted a site visit to observe the current conditions of the SWMUs and/or TAAs, and performed limited sampling. During a field RFA visit on May 1, 1991, JEG identified SWMU 160 (also known as TAA 636A) as a temporary hazardous waste storage area, to the south of “Z” Street and south of Building 636.

Per JEG’s VSI Evaluation form, SWMU 160 (TAA 636A) is described as a sandbag berm encompassing an 11-foot by 16-foot area. A canvas sheet was draped over the berm and provided the lining for the HWSA. A tear in the canvas liner was observed near the southeastern corner within the HWSA. The HWSA was bordered on all sides by grassy or bare soil areas. Two 55-gallon drums were observed outside the bermed area on unpaved ground. One drum contained solid materials and the other container was empty. Two metal storage lockers for storage of flammable materials were located to the north and south of the HWSA. Hazardous materials that may have been stored at SWMU 160 included waste oil and absorbent with waste fuel and oil. Stains were observed on the canvas liner of the HWSA and JEG recommended and implemented a sampling visit for SWMU 160 (JEG, 1991).

During a sampling visit in 1992, JEG advanced one soil boring (160A1) on the west side of SWMU 160 (TAA636B). Soil boring 160A1 was drilled using a hollow-stem auger rig to a depth of 61 feet below ground surface. A total of six soil samples were collected at 10-foot intervals to 60 feet below ground surface. Analysis of all six soil samples indicated maximum concentrations of compounds detected as the following:

- Acetone at 8BJ  $\mu\text{g}/\text{kg}$
- Methylene chloride at 5J  $\mu\text{g}/\text{kg}$
- 2-Butanone at 2BJ  $\mu\text{g}/\text{kg}$
- di-n-butylphthalate at 5,500  $\mu\text{g}/\text{kg}$
- bis(2-Ethylhexyl)phthalate at 490B  $\mu\text{g}/\text{kg}$
- butylbenzylphthalate at 2900  $\mu\text{g}/\text{kg}$

*Explanation:*

B – Analyte was found in associated blank as well as the sample

J – Indicates an estimated value

Because the concentrations of detected compounds were below established cleanup goals for the site and/or below the contract required detection limit (CRDL) from the RFA, JEG recommended “*No Further Action (NFA)*” for SWMU 160 (TAA 636B). Copies of the VSI form, figure, and analytical results table from the JEG RFA report are included in Appendix B.

After review of the JEG RFA report, DTSC requested additional information about TAAs to determine the closure requirements. BNI performed visual assessments at 73 TAAs to provide additional information for a closure strategy for TAAs. On December 5, 1994, BNI visited Building 636 and observed TAA 636B located approximately 70 feet south of Building 636 and north of “Z” Street.

During the BNI VSI in December 1994, TAA 636B was observed to be a 10-foot by 10-foot, concrete pad with berm. Eight drums were observed on the concrete pad. No spills or stains were observed on the pad (BNI, 1996), and no soil sampling was performed by BNI. Copies of the TAA 636B VSI evaluation forms from the BNI Final RFA Addendum report are included in Appendix C. BNI did not observe a TAA 636A during their site visit. It is likely that TAA 636A was no longer active during the BNI site visit. It is estimated that TAA 636B was constructed after 1991.

In 1997, OHM prepared a TAA closure work plan to perform confirmation sampling and decontamination of various TAA sites including TAAs 636A and 636B as warranted. The following sections describe IT's approach and field efforts for closure of TAAs 636A and 636B.

## **3.0 Field Activities**

---

The following subsections describe the activities that were performed by IT at TAAs 636A and 636B. Field activities were conducted in accordance with the approved *Final Supplemental Work Plan* (OHM, 1997a) and approved *Revised Addendum to the Draft Supplemental Work Plan, Marine Corps Air Station El Toro, California* (IT, 2002). Field activities conducted at TAAs 636A and 636B included a site inspection and confirmation soil sampling. Photographs taken of TAAs 636A and 636B in September, 2002 are included in Appendix D.

### **3.1 Preparatory Work**

IT performed a site visit at TAAs 636A and 636B on April 18, 1997 before performing any field activities. TAA 636A was observed to be an inactive TAA, consisting of a sandbag berm on the ground surface. No evidence of a release was observed around the TAA 636A. TAA 636B was observed to be an inactive TAA, consisting of a vacant concrete pad with a berm and a sump with a ramp adjoining the bermed pad. No evidence of a release or stains was observed around the TAA 636B. The surface of the concrete pad was clean and intact without any major cracks; therefore, no decontamination was necessary of the concrete pad. A copy of the Site Assessment Log is included as Appendix E.

Another visual site inspection was conducted at TAAs 636A and 636B by a representative from SWDIV and from IT Corporation, with a representative from the California Department of Toxic Substances Control (DTSC) present. During the visual inspection of TAA 636A, stains were not observed on the canvas cover and the soil below the canvas cover did not appear to be discolored or stained. Additionally, the soil adjacent to TAA 636A did not appear to be stained or discolored. During the visual site inspection of TAA 636B, no evidence of a release was observed on or adjacent to the concrete pad.

### **3.2 Confirmation Soil Sampling**

#### **3.2.1 TAA 636A Confirmation Sampling**

Confirmation soil samples were collected on September 19, 2002 from two hand-auger locations in TAA 636A. A total of four soil samples were collected from two hand-auger boring locations (636A-SBA and 636A-SBB), one on the north and one on the south side within TAA 636A. Soil sample locations were selected based on a visual inspection performed during the site visit on April 18, 1997 and in August 2002.

Soil samples were collected in standard stainless steel sleeves at two different depths at both soil boring locations: 18 and 36 inches below ground surface. Details on the sampling strategy and analytical methods are discussed in Section 4.

### ***3.2.2 TAA 636B Confirmation Sampling***

Confirmation soil samples were collected on September 19, 2002 from one soil boring location at the bottom of the sump at TAA 636B. A total of 2 soil samples (636B-Sump1 and 636B-Sump2) were collected from the boring location. The soil boring location was selected based on a visual inspection performed during the site visit in August 2002.

Soil samples were collected at 18 and 36 inches below ground surface using a hammer-driven split core sampler that contained a stainless steel sleeve. Details on the sampling strategy and analytical methods are discussed in Section 4.

After completing the confirmation soil sampling at TAAs 636A and 636B, the hand-auger soil boring locations were surveyed by Cal Vada Surveying Inc., a California-licensed land surveyor. The surveyed locations were measured to  $\pm 0.01$  foot horizontally and tied to the California State Plane Coordinate Systems, North American Datum 1983. The surveyed elevations were measured to  $\pm 0.01$  foot vertically and tied to mean sea level datum. The land surveying data for TAAs 636A and 636B are presented as Appendix F. Locations of hand-auger locations at TAA 636A and TAA 636B are provided in Figure 3-1.

## **4.0 Sampling Analytical Results and Data Quality Assessment**

---

The objective of confirmation sampling and analysis was to provide analytical data to characterize the soil condition in the vicinity of TAAs 636A and 636B. The sampling methodology, analytical methods, analytical results, and interpretation of confirmation soil sampling have been performed in accordance with the analytical strategy presented in the DTSC-approved *Final Supplemental Work Plan* (OHM, 1997a) and are described in the following text and approved *Revised Addendum to the Draft Supplemental Work Plan, Marine Corps Air Station El Toro, California* (II, 2002) and are described in the following text.

The laboratory analyses were performed according to test methods specified in EPA Solid Waste-846 (Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, June 1997) and California Leaking Underground Fuel Tank (CA LUFT) Manual (State Water Resources Control Board, 1989). The test methods used for analyses were selected on the basis of their ability to detect the chemicals of potential concern with suitable detection limits to verify the successful decontamination of former TAAs 636A and 636B and to provide data for assessment of risk to human health and the environment. A list of all the analytical methods that were performed for former TAA 10 is provided in Section 4.2.

All samples were analyzed by EMAX Laboratories, Inc., which is a state of California certified and Naval Facilities Engineering Services Center-approved analytical laboratory.

### **4.1 Field Sampling Summary**

#### **4.1.1 Confirmation Soil Sampling**

The sampling strategy for TAAs 636A and 636B focused on two aspects of the site: possible releases on the surface of the TAA or possible releases into the soil surrounding the TAA. Soil samples were collected and analyzed for the constituents contained in the wastes that may have been stored at TAAs 636A and 636B.

Sample locations were selected based on visual inspection performed during a site visit, which included any areas where there was evidence of spills, contamination of concrete, or visual signs of secondary containment structure deterioration (cracks in berms). However, no cracks or visual indications of spills were observed at TAA 636B. TAA 636A consisted of a ground surface surrounded by a sandbag berm. A total of four confirmation soil samples (sample numbers 818655-B3091 through 818655-B3093) were collected at TAA 636A from 2 hand auger borings and a total of two confirmation soil samples were collected at TAA 636B from 1

hand auger borings (818655-B3095 through 818655-B3096). The locations of hand auger borings are shown in Figure 1-2.

A hand auger was used to bore into the soil within the TAAs to approximately 36 inches. Soil samples were collected at 18 and 36 inches below ground surface using a hammer-driven split core sampler that contained a stainless steel sleeve. Following the collection of the soil samples, the excess soil was placed back in the open boreholes (no airborne volatile organic compounds (VOCs) were identified by the photoionization detector). The surface was then finished to match the existing ground surface.

#### **4.1.2 Quality Control**

Field quality assurance/quality control (QA/QC) samples were collected at the TAA site as follows:

- Equipment rinsate samples were collected at a frequency of 1 per day.
- Trip blank samples were collected at a frequency of 1 per sample cooler for coolers containing samples for volatile analysis.

One equipment rinsate sample (sample number 818655-B3102) and one trip blank (sample number 818655-B3090) were collected for the TAA sites.

EMAX Laboratories, Inc. performed the following laboratory QA/QC sample analysis:

- Laboratory control sample/sample duplicate analysis was performed at a frequency of 1 sample per batch.
- Laboratory matrix spike/spike duplicate sample analysis was performed at a frequency of 1 per 20 samples or per batch.
- Laboratory method blank analysis was performed at a frequency of 1 per batch

#### **4.1.3 Equipment Decontamination**

Equipment used in the exclusion zone was decontaminated prior to removal from the site, as identified in the site specific Health and Safety Plan (HSP). The equipment used for collecting soil samples was decontaminated between each use. The hand auger assembly was washed in a typical three step procedure consisting of: decontaminating the equipment first using a brush in a bucket of Alconox<sup>TM</sup> detergent and water; then a second bucket of water for immediate rinse; and again in a third bucket of analyte-free water for the final rinse.

## **4.2 Analytical Methods**

Analytical methods were selected to encompass all the chemicals of potential concern at TAAAs 636A and 636B. The following methods were performed to characterize samples collected from TAAAs 636A and 636B:

- VOCs by EPA Method 8260B
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270C
- TPH as gasoline by CA LUFT 8015 Modified (purge and trap)
- TPH as diesel/jet fuel by CA LUFT 8015 Modified (extraction)
- Pesticides and polychlorinated biphenyls by EPA Method 8081
- Metals by EPA Method 6010B and 7000

Additionally, the Selected Ion Monitoring (SIM) technique was used on the following seven semi-volatile organic compounds in order to achieve detection limits lower than the Region 9 PRGs (EPA, 2002):

- Benzo(a)pyrene
- bis(2-Chloroethyl)ether
- Dibenzo(a,h)anthracene
- Hexachlorobenzene
- Indeno(1,2,3-cd)pyrene
- n-Nitrosodi-n-propylamine.

SIM is a recognized gas chromatograph/mass spectrometer technique used to lower detection limits for organic compounds. As specified in EPA Method 8270B, semi-volatile compounds are introduced into the gas chromatograph by direct injection. The components of the sample are separated by the gas chromatograph and detected by the mass spectrometer, which provides both qualitative and quantitative information.

For each component or compound separated by the gas chromatograph, the mass spectrometer produces a characteristic mass spectrum. The mass spectrometer ionizes the sample molecules and separates any resulting fragments by mass-to-charge ( $m/z$ ) ratios. The fragmentation pattern is used to determine the structure of the original molecule. The intensity of one or more of the fragments is used to quantitate the identified compound.

Upon identification of a target compound by comparison of the acquired mass spectrum with the mass spectrum of a standard, EPA Method 8270B specifies a fragment or characteristic ion to use for quantitation of the analyte. Method 8270B requires that the mass spectrometer scan from 35 to 500 amu ( $m/z$ ) every 1 second or less. In SIM, the entire mass range is not scanned.

Typically, only a few m/z are monitored. As a result, the mass spectrometer is able to collect more data from a specific m/z, resulting in an improved signal-to-noise ratio, which in turn improves detection limits. There is, however, a practical limitation to the number of m/z that can be monitored at one time so that the total scan time does not exceed 1 second. As a result, the number of compounds that can be measured in a single SIM analysis is limited.

### **4.3 Laboratory Analytical Results**

This section provides summary and assessment of the analytical results from the sampling performed at TAAAs 636A and 636B. The analytical results for the confirmation soil samples at TAAAs 636A and 636B with comparison to the background concentrations and PRGs are presented in Table 4-1. QC sample analytical data for TAAAs 636A and 636B are presented in Table 4-2. The hard copies of the analytical results with QA/QC data obtained from VOC Analytical Laboratory are included in Appendix G.

#### **4.3.1 TAA 636A Soil Sample Analytical Results**

**Total Petroleum Hydrocarbons** — IPH as gasoline and diesel were not detected above the laboratory reporting limits in any confirmation soil samples collected from TAA 636A.

**Volatile Organic Compounds** — VOCs were not detected in any confirmation soil samples above laboratory reporting limits.

**Pesticides** — Pesticide compounds were not detected above the laboratory reporting limits in any of the confirmation soil samples collected from TAA 636A.

Reporting limits for 4,4'-Ddd, endosulfan I, endosulfan II, endosulfan sulfate, endrin, endrin, and aldehyde exceeded the established background levels for the base.

**Semi-Volatile Organic Compounds** — No SVOCs were detected above the laboratory reporting limits in the confirmation soil samples collected from TAA 636A.

The reporting limits were above the established background levels for: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)-anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene. To ensure that the laboratory reporting limits were lower than the residential PRGs, the following seven SVOCs were analyzed using the SIM technique:

- Benzo(a)pyrene
- bis(2-Chloroethyl)ether

- Dibenzo(a,h)anthracene
- Hexachlorobenzene
- Indeno(1,2,3-cd)pyrene
- n-Nitrosodi-n-propylamine.

The IT criterion for acceptance of this SIM data was that the laboratory method detection limit (MDL) must be equal to or less than half of the PRG.

**Metals** — The following metals were reported above the reporting limit in the confirmation soil samples as presented in Table 4-1: aluminum, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc. The reporting limits and positive results for several analytes exceeded the established background values. These results are flagged with a B in Table 4-1.

#### **4.3.2 TAA 636B Soil Sample Analytical Results**

**Total Petroleum Hydrocarbons** — TPH as gasoline, and diesel were not detected above the laboratory reporting limits in any confirmation soil samples collected from TAA 636B.

**Volatile Organic Compounds** — VOCs were not detected in any confirmation soil samples above the laboratory reporting limits in any confirmation soil samples collected from TAA 636B.

**Pesticides** — Pesticide compounds were not detected above the laboratory reporting limits in any of the confirmation soil samples collected from TAAS 636A.

Reporting limits for 4,4'-Ddd, endosulfan I, endosulfan II, endosulfan sulfate, endrin, endrin, and aldehyde exceeded the established background levels for the base.

**Semi-Volatile Organic Compounds** — No SVOCs were detected above the laboratory reporting limits in the confirmation soil samples collected from TAA 636B.

The reporting limits were above the established background levels for: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)-anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene. To ensure that the laboratory reporting limits were lower than the residential PRGs, the following seven SVOCs were analyzed using the SIM technique:

- Benzo(a)pyrene
- bis(2-Chloroethyl)ether
- Dibenzo(a,h)anthracene
- Hexachlorobenzene

- Indeno(1,2,3-cd)pyrene
- n-Nitrosodi-n-propylamine

The IT criterion for acceptance of this SIM data was that the laboratory method detection limit (MDL) must be equal to or less than half of the PRG.

**Metals** — The following metals were reported above the reporting limit in the confirmation soil samples as presented in Table 4-1: aluminum, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc. The reporting limits and positive results for several analytes exceeded the established background values. These results are flagged with a B in Table 4-1.

#### **4.3.3 QC Sample Analytical Results**

One trip blank was collected for TAAs 636A and 636B (818655-B3090). The trip blank was analyzed for SVOCs, and no analytes were reported above the reporting limits.

One equipment rinsate sample (818655-B3102) was collected and analyzed for IPH, pesticides, PCBs, SVOCs, and metals. None of the analytes were detected above the laboratory reporting limits for the equipment rinsate sample.

#### **4.4 Data Quality Assessment**

TAAs 636A and 636B analytical data were reviewed and validated with respect to the QA/QC parameters specified in the work plan. The following were evaluated:

- EPA recommended holding times
- Cooler condition upon receipt by the laboratory
- Initial and continuing calibration standards
- Method blanks
- Surrogate recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries
- Laboratory control samples (LCS) recoveries.

All samples were prepared and analyzed within EPA recommended holding times. The sample cooler was received intact and within the required temperature range of 4 $\pm$ 2 degrees Celsius. Any sample results associated with QC parameters that were out of compliance with the Work Plan have been flagged and annotated in Tables 4-1 and 4-2. All data are useable as qualified.

## **4.5 Data Validation**

This section addresses the validity and quality of the data collected from TAAs 636A and 636B. Analytical data were reviewed and validated in accordance with the EPA *National Functional Guidelines for Organic and Inorganic Data Review* (EPA, 1994). Laboratory Data Consultants (LDC), an independent data validation company, performed Level III and Level IV validation on the data. A hard copy of the LDC report is provided in Appendix H.

Laboratory analytical data were subjected to a four-stage process of evaluation: completeness checks, verification of hard copy and electronic results, validation of the data, and final evaluation based on the professional judgment of the project chemist.

The data were qualified by LDC to indicate whether the data has been affected by any deviation from the analytical protocols established in the Final Supplemental Work Plan (OHM, 1997a). Unusable data was qualified with an "R" (rejected). All other results were either unqualified (no flag), nondetected ("U" flag), nondetected with uncertainty in the report detection limits ("UJ" flag), or detected with uncertainty in the reported concentration ("J" flag).

### **4.5.1 Analytical Quality Control Program – TAA 636A**

This section provides a description of the field and laboratory QC sample results, which were used to evaluate the precision, accuracy, representativeness, completeness, and comparability.

**Precision** — Precision was evaluated based on the QC results submitted from the field and from the laboratory. The calculated relative percent difference (RPD) of MS/MSDs, laboratory control sample/laboratory control sample duplicates (LCS/LCSDs), and the field duplicate pair provided information on the precision of sampling and analytical procedures. RPDs for duplicate samples were not calculable when one or both results were not detected. The precision results for all other samples were within the required limits.

**Accuracy** — Evaluation of the percent recovery (%R) of spiked analytes in MS/MSD samples, LCS/LCSDs, and surrogates provide information on accuracy. In addition, the initial and continuing calibration results provided information on analytical accuracy. The following results did not meet the project accuracy acceptance limits:

- The percent difference for 4,4'-DDE, endrin, 4,4'-DDD and methoxychlor in the continuing standard mixtures did not meet the less than or equal to 15 percent acceptance criterion. The positive results for these analytes in sample numbers 818655-B3100 and 818655-B3101, were qualified as estimated, "J"

- The ICP Interference Check Sample (ICS) analysis was not within the 80-120 percent range. Antimony ICP ICS analysis was at 125 percent.

**Representativeness** — Representativeness was assessed through the evaluation of method blank and trip blank samples. Target analytes were not detected in the method and trip blank samples with the following exception:

- Methylene chloride in the method blank
- Methylene chloride in sample number 818655-B3090
- Manganese in the method preparation blank
- Antimony in the method ICB/CCB blank
- Zinc in the method ICB/CCB blank
- Sodium in the method ICB/CCB blank

The samples listed above were qualified as estimated "J."

- Mercury in sample number 818655-B3102
- Calcium in sample number 818655-B3102
- Sodium in sample number 818655-B3102
- TPH as gas in sample number 818655-B3102.

**Completeness** — Completeness was evaluated with respect to two criteria. The first criterion was assuring that all analytical requests were met, samples were received in the proper condition, and all analytes were performed within the technical holding times. The second criterion was evaluating the analytical completeness by calculating the percent of acceptable analytes. The completeness parameters are:

- The completeness goal for holding times is 100 percent.
- The goal for sample collection and analysis frequency of duplicate and MS/MSD samples was 10 and 5 percent, respectively.
- The percent analytical completeness goal was 90 percent.

All samples were extracted and analyzed within the appropriate holding times. The percent analytical completeness goal is based on a project-wide sampling program and cannot be assessed on a site-by-site basis.

**Comparability** — To ensure comparability, sampling was performed using standardized procedures. Laboratory procedures follow EPA analytical methods and the CA LUFT Manual guidelines. All soil samples were reported on a dry weight basis. The data were then evaluated

for comparability of reporting detection limits (RDLs) and associated dilution factors. RDLs were elevated when samples required dilution to quantify target compounds within the linear range of the instrument or when sample matrix interference occurred. If the RDL exceeded the target cleanup level, the MDL, rather than the RDL, was used to assess the data. If the concentrations exceeded the MDLs, but were below the RDLs, the laboratories flagged the results with the qualifier "J." If the concentrations were below the MDLs, the results were reported as nondetected at the RDLs and flagged with a qualifier "U." All MDLs are listed on the laboratory data sheets and meet the target cleanup level requirements. All reporting limits were achieved for VOCs, SVOC, IPH, Pesticides, PCBs, and Metals by the laboratory.

**Summary** — All data associated with TAA 636A were usable and acceptable as qualified. Overall precision and accuracy were met. The analytical results and associated qualifiers are summarized in Tables 4-1 and 4-2.

#### **4.5.2 Analytical Quality Control Program – TAA 636B**

This section provides a description of the field and laboratory QC sample results, which were used to evaluate the precision, accuracy, representativeness, completeness, and comparability.

**Precision** — Precision was evaluated based on the QC results submitted from the field and from the laboratory. The calculated relative percent difference (RPD) of MS/MSDs, laboratory control sample/laboratory control sample duplicates (LCS/LCSDs), and the field duplicate pair provided information on the precision of sampling and analytical procedures. RPDs for duplicate samples were not calculable when one or both results were not detected. The precision results for all other samples were within the required limits.

**Accuracy** — Evaluation of the percent recovery (%R) of spiked analytes in MS/MSD samples, LCS/LCSDs, and surrogates provide information on accuracy. In addition, the initial and continuing calibration results provided information on analytical accuracy. The following results did not meet the project accuracy acceptance limits:

- The percent difference for 4,4'-DDE, endrin, 4,4'-DDD and methoxychlor in the continuing standard mixtures did not meet the less than or equal to 15 percent acceptance criterion. The positive results for these analytes in sample numbers 818655-B3100 and 818655-B3101 were qualified as estimated, "J."
- The ICP Interference Check Sample (ICS) analysis was not within the 80-120 percent range. Antimony ICP ICS analysis was at 125 percent.

**Representativeness** — Representativeness was assessed through the evaluation of method blank and trip blank samples. Target analytes were not detected in the method and trip blank samples with the following exception:

- Methylene chloride in the method blank
- Methylene chloride in sample number 818655-B3090
- Manganese in the method preparation blank
- Antimony in the method ICB/CCB blank
- Zinc in the method ICB/CCB blank
- Sodium in the method ICB/CCB blank.

The samples listed above were qualified as estimated "J."

- Mercury in sample number 818655-B3102
- Calcium in sample number 818655-B3102
- Sodium in sample number 818655-B3102
- TPH as gas in sample number 818655-B3102.

**Completeness** — Completeness was evaluated with respect to two criteria. The first criterion was assuring that all analytical requests were met, samples were received in the proper condition, and all analytes were performed within the technical holding times. The second criterion was evaluating the analytical completeness by calculating the percent of acceptable analytes. The completeness parameters are:

- The completeness goal for holding times is 100 percent
- The goal for sample collection and analysis frequency of duplicate and MS/MSD samples was 10 and 5 percent, respectively.
- The percent analytical completeness goal was 90 percent.

All samples were extracted and analyzed within the appropriate holding times. The percent analytical completeness goal is based on a project-wide sampling program and cannot be assessed on a site-by-site basis.

**Comparability** — To ensure comparability, sampling was performed using standardized procedures. Laboratory procedures follow EPA analytical methods and the CA LUFT Manual guidelines. All soil samples were reported on a dry weight basis. The data were then evaluated for comparability of reporting detection limits (RDLs) and associated dilution factors. RDLs were elevated when samples required dilution to quantify target compounds within the linear range of the instrument or when sample matrix interference occurred. If the RDL exceeded the

target cleanup level, the MDL, rather than the RDL, was used to assess the data. If the concentrations exceeded the MDLs, but were below the RDLs, the laboratories flagged the results with the qualifier "J." If the concentrations were below the MDLs, the results were reported as nondetected at the RDLs and flagged with a qualifier "U." All MDLs are listed on the laboratory data sheets and meet the target cleanup level requirements. All reporting limits were achieved for VOCs, SVOC, IPH, pesticides, PCBs, and Metals by the laboratory.

**Summary** — All data associated with TAA 636B were usable and acceptable as qualified. Overall precision and accuracy were met. The analytical results and associated qualifiers are summarized in Tables 4-1 and 4-2.

## **5.0 Risk Characterization and Hazard Index Calculation – TAA 636A**

---

This section briefly describes the approach used to estimate risk and summarizes the baseline screening level risk assessment results for TAA 636A. A screening level risk assessment for human health was conducted following the guidance provided in the EPA Region 9 PRGs Memorandum dated November 6, 2002 (EPA, 2002). The results of confirmation soil sampling conducted at TAA 636A were used to calculate risks.

### **5.1 Physical Characteristics of TAA 636A**

Based on the review of the JEG boring log, the subsurface lithology at TAA 636A consists of primarily of silts and sands. These units appear typical of the channel and overbank deposits comprising the Holocene deposits on the Tustin Plain. The groundwater is present at a depth of approximately 98 feet below ground surface (CDM, 2002).

### **5.2 Exposure Assessment**

TAA 636A was used as a temporary hazardous waste storage area for storage of hazardous materials. The surrounding area to TAA 636A is unpaved. The land use scenario is currently considered to be industrial.

The Station officially closed on July 2, 1999 in accordance with the Base Closure and Realignment Act of 1993 (BRAC III). Former TAAs 636A are located within a parcel designated for future use as drainage/wildlife corridor area according to the Great Park Land Use Plan that was issued by the City of Irvine in June 2002. The Great Park Land Use Plan is provided in Appendix A.

For screening purposes, the ingestion, dermal contact, and inhalation exposure pathways are assumed to be complete for TAA 636A, as if the area were unpaved. Should the screening fail, further evaluation of the exposure pathways would be required. A site conceptual model for TAA 636A is shown on Figure 5-1.

Under an industrial and/or residential land use scenario at TAAs 636A, workers or humans could be potentially exposed to surrounding soil by ingestion, dermal contact, or inhalation of dust or volatilized contaminants. These are the same exposure pathways evaluated by the EPA PRGs (EPA, 2002). Figure 5-2 presents the potential migration pathways at TAA 636A.

For the purposes of this risk screening evaluation, the residential scenario is used as the worst-case scenario. If the risk were acceptable for the residential land use scenario, the risk would also be acceptable for both the current and future land use scenarios.

### **5.3 Toxicity Assessment**

The PRGs incorporate the toxicity values from the Integrated Risk Information System, the Health Effects Assessment Summary Tables, and the National Center for Environmental Assessment. Cancer PRGs incorporate cancer toxicity values and the noncancer PRGs incorporate the toxicity values for chronic health effects other than cancer (EPA, 2002). Both cancer risk and noncancer hazards were evaluated in this screening risk assessment.

### **5.4 Risk Characterization**

The PRGs are concentrations calculated using standard exposure factors that are protective of humans, including sensitive groups, over a lifetime. These PRG concentrations pose acceptable cancer risk or non-cancer hazard under the exposure scenarios evaluated. Generally, a cancer risk of  $10^{-6}$  and a non-cancer hazard index (HI) of 1.0 or less are considered acceptable levels of exposure. Therefore, the PRG concentrations are calculated to the lower end of the acceptable cancer risk range of  $10^{-6}$  and to a non-cancer hazard index of 1.0.

Cancer risk is calculated by dividing the site concentration by the PRG for each chemical. The ratios are added and the sum is then multiplied by  $10^{-6}$ . The hazard index is calculated by dividing the site concentration by the PRG for each chemical and adding the resultant ratios.

Although maximum concentrations for chemicals detected at the site are used for this risk screening, comparisons are not made to maximum detected background concentrations. To maintain a conservative estimate of background risk, the 95<sup>th</sup> quantile background concentrations calculated for the Station (BNI, 1996b) are used to calculate background contributions to cancer risk.

At TAA 636A, the detected carcinogens in soil include arsenic and chromium. None of the carcinogens were detected above established background concentrations. The summed cancer risk for soil under the potential future residential scenario after subtracting background is less than  $10^{-6}$  (Table 5-1). The net cancer risk for the current industrial scenario after subtracting background is also less than  $10^{-6}$  (Table 5-2).

Compounds that were detected at TAA 636A that contribute to the non-cancer HI include aluminum, arsenic, barium, cobalt, copper, iron, lead, manganese, nickel, selenium, vanadium

and zinc. The summed non-cancer hazard index for soil under the potential future residential scenario after subtracting background is less than 1.0 (Table 5-1). This is a conservative HI because it includes background contributions, assumes that maximum detected concentrations are representative of the entire site, and is summed across all toxicological endpoints. For the current industrial land use scenario, the non-cancer hazard index is 0.76 (Table 5-2).

### Summary

The site-related incremental cancer risk and non-cancer hazard index at TAA 636A are acceptable for the following reasons:

- The net carcinogenic risk is less than  $10^{-6}$  for the residential scenario and the industrial scenario.
- The non-cancer hazard index for detected chemicals is less than 1.0 for the residential scenario and the industrial scenario.

The non-cancer hazard index for the potential future residential land use is less than 1.0 for individual target organs using average concentrations for the potential contributors to the HI.

## **6.0 Risk Characterization and Hazard Index Calculation – TAA 636B**

---

This section briefly describes the approach used to estimate risk and summarizes the baseline screening level risk assessment results for TAA 636B. A screening level risk assessment for human health was conducted following the guidance provided in the EPA Region 9 PRGs Memorandum dated November 6, 2002 (EPA, 2002). The results of confirmation soil sampling conducted at TAA 636B were used to calculate risks.

### **6.1 Physical Characteristics of TAA 636B**

Based on the review of the JEG boring log, the subsurface lithology at TAA 636B consists of primarily of silts clays. These units appear typical of the channel and overbank deposits in comprising the Holocene deposits on the Tustin Plain. The groundwater is present at a depth of approximately 98 feet below ground surface (CDM, 2002).

### **6.2 Exposure Assessment**

TAA 636B was used as a temporary hazardous waste storage area for storage of drums containing hazardous materials. The surrounding area to TAA 636B is unpaved. The land use scenario is currently considered to be industrial.

The Station officially closed on July 2, 1999 in accordance with the Base Closure and Realignment Act of 1993 (BRAC III). Former TAA 636A is located within a parcel designated for future use as drainage/wildlife corridor area according to the Great Park Land Use Plan that was issued by the City of Irvine in June 2002. The Great Park Land Use Plan is provided in Appendix A.

For screening purposes, the ingestion, dermal contact, and inhalation exposure pathways are assumed to be complete for TAA 636B, as if the area were unpaved. Should the screening fail, further evaluation of the exposure pathways would be required. A site conceptual model for TAA 636B is shown on Figure 6-1.

Under an industrial and/or residential land use scenario at TAA 636B, workers or humans could be potentially exposed to surrounding soil by ingestion, dermal contact, or inhalation of dust or volatilized contaminants. These are the same exposure pathways evaluated by the EPA PRGs (EPA, 2002). Figure 6-2 presents the potential migration pathways at TAA 636B.

For the purposes of this risk screening evaluation, the residential scenario is used as the worst-case scenario. If the risk were acceptable for the residential land use scenario, the risk would also be acceptable for both the current and future land use scenarios.

### **6.3 Toxicity Assessment**

The PRGs incorporate the toxicity values from the Integrated Risk Information System, the Health Effects Assessment Summary Tables, and the National Center for Environmental Assessment. Cancer PRGs incorporate cancer toxicity values and the noncancer PRGs incorporate the toxicity values for chronic health effects other than cancer (EPA, 2002). Both cancer risk and noncancer hazards were evaluated in this screening risk assessment.

### **6.4 Risk Characterization**

The PRGs are concentrations calculated using standard exposure factors that are protective of humans, including sensitive groups, over a lifetime. These PRG concentrations pose acceptable cancer risk or non-cancer hazard under the exposure scenarios evaluated. Generally, a cancer risk of  $10^{-6}$  and a non-cancer hazard index (HI) of 1.0 or less are considered acceptable levels of exposure. Therefore, the PRG concentrations are calculated to the lower end of the acceptable cancer risk range of  $10^{-6}$  and to a non-cancer hazard index of 1.0.

Cancer risk is calculated by dividing the site concentration by the PRG for each chemical. The ratios are added and the sum is then multiplied by  $10^{-6}$ . The hazard index is calculated by dividing the site concentration by the PRG for each chemical and adding the resultant ratios.

Although maximum concentrations for chemicals detected at the site are used for this risk screening, comparisons are not made to maximum detected background concentrations. To maintain a conservative estimate of background risk, the 95<sup>th</sup> quantile background concentrations calculated for the Station (BNI, 1996b) are used to calculate background contributions to cancer risk.

At TAA 636B, the detected carcinogens in soil include arsenic and chromium. None of the carcinogens were detected above established background concentrations (background concentrations have not been established for methylene chloride or pentachlorophenol). The summed cancer risk for soil under the potential future residential scenario after subtracting background is less than  $10^{-6}$  (Table 6-1). The net cancer risk for the current industrial scenario after subtracting background is also less than  $10^{-6}$  (Table 6-2).

Compounds that were detected at TAA 636B that contribute to the non-cancer HI include aluminum, arsenic, barium, cadmium, cobalt, copper, iron, lead, manganese, nickel, selenium, vanadium, and zinc. The summed non-cancer hazard index for soil under the potential future residential scenario after subtracting background is less than 1.0 (Table 6-1). For the current industrial land use scenario, the non-cancer hazard index is 0.77 (Table 6-2)

### Summary

The site-related incremental cancer risk and non-cancer hazard index at TAA 636B are acceptable for the following reasons:

- The net carcinogenic risk is less than  $10^{-6}$  for the residential scenario and the industrial scenario.
- The non-cancer hazard index for detected chemicals is less than 1.0 for the current residential scenario and industrial scenario.

## **7.0 Conclusions and Recommendations**

---

The following conclusions are based upon existing background information, previous field investigations, and IT's confirmation soil sampling analytical results and screening level risk assessment calculations:

### TAA 636A

- JEG conducted a VSI of SWMU 160 (TAA 636A) in April 1991. SWMU 160 was described as a sandbag berm, with a canvas liner draped over the storage area and berm, encompassing an 11-foot by 16-foot area. Hazardous materials that may have been stored at SWMU 160 included waste oil and absorbent with waste fuel and oil. Stains were observed on the canvas liner of the HWSA and JEG recommended a sampling visit.
- During a sampling visit in 1992, JEG advanced one angle soil boring (160A1) on the west side of TAA636A. Soil boring 160A1 was drilled using a hollow-stem auger rig to a depth of 61 feet below ground surface. A total of six soil samples were collected at 10-foot intervals to 60 feet below ground surface. Because the concentrations of detected compounds were below established cleanup goals for the site and/or below the contract required detection limit (CRDL) from the RFA, JEG recommended "*No Further Action (NFA)*" for TAA 636A.
- OHM and II observed inactive TAA 636A on April 18, 1997 and on September 19, 2002 with no evidence of release.
- IT collected four confirmation soil samples from two hand auger borings at TAA 636A. Selenium was detected (above laboratory reporting limits and background levels). IPH as diesel, IPH as gas, PCBs, pesticides, Semi-volatile organic compounds, and volatile organic compounds were not detected above laboratory reporting limits. Based on the review of analytical data, there was no indication of hazardous contaminants from previous spills or handling of hazardous wastes.
- The detected carcinogens in soil include arsenic and chromium. The detected carcinogens were evaluated to determine the risk associated with their presence for present or anticipated future land uses. Compounds detected at TAA 636A that were evaluated for non-cancer HI contribution include aluminum, arsenic, barium, cobalt, copper, iron, lead, manganese, nickel, selenium, vanadium and zinc.
- The residential and industrial risk calculations for TAA 636A resulted in a site-related net cancer risk less background risk of less than  $10^{-6}$ . The residential and industrial non-cancer HI's less background risk was less than 1.0.

## TAA 636B

- BNI in December 1994 conducted a site inspection and identified storage of eight drums at SWMU 160 (TAA 636B). No stains were reported, and BNI performed no soil sampling.
- IT observed inactive TAA 636B on April 18, 1997 and on September 19, 2002 with no evidence of release, stains, or cracks on the surface of the concrete pad or sump.
- IT collected 2 confirmation soil samples from one hand augur boring from the bottom of the sump at TAA 636B. Selenium was detected (above laboratory reporting limits and background levels). ITPH as diesel, ITPH as gas, PCBs, pesticides, Semi-volatile organic compounds, and volatile organic compounds were not detected above laboratory reporting limits. Based on the review of analytical data, there was no indication of hazardous contaminants from previous spills or handling of hazardous wastes.
- The detected carcinogens in soil include arsenic and chromium. The detected carcinogens were evaluated to determine the risk associated with their presence for present or anticipated future land uses. Compounds detected at TAA 636B that were evaluated for non-cancer HI contribution include aluminum, arsenic, barium, cadmium, cobalt, copper, iron, lead, manganese, nickel, selenium, vanadium, and zinc.
- The residential and industrial risk calculations for TAA 636B resulted in a site-related net cancer risk less background risk of less than  $10^{-6}$ . The residential and industrial non-cancer HI's less background risk was less than 1.0.

The objectives of this project are considered to be achieved, since TAA 636B is no longer used for storage of hazardous waste drums. Confirmation soil sampling was conducted at TAA 636B to verify that concentrations of contaminants were at or below acceptable background or health-risk based concentrations.

Based upon the absence of evidence of a significant release at TAAs 636A and 636B (SWMU 160), the screening risk calculations, it is recommended that no further action status be designated for TAAs 636A and 636B (SWMU 160) in the next Base Realignment Closure Business Plan update.

## 8.0 References

---

Bechtel National, Inc., 1996a, *Final Addendum RCRA Facility Assessment Report, Marine Corps Air Station El Toro, California*, May.

Bechtel National, Inc., 1996b, *Final Technical Memorandum Background and Reference Levels Remedial Investigations, Marine Corps Air Station El Toro, California*, October.

BNI, see Bechtel National, Inc.

Camp Dresser & McKee, Inc. Federal Programs Corporation, 2002, *Final Groundwater Monitoring Report, March 2002, Monitoring Round 15*, August.

CDM, see Camp Dresser & McKee, Inc.

County of Orange, 1999, *The Preferred Land Use Plan (Concept B)*, September.

Jacobs Engineering Group Inc , 1993, *Final RCRA Facility Assessment Report, Marine Corps Air Station El Toro, California*, July

JEG, see Jacobs Engineering Group Inc.

OHM Remediation Services Corp , 1995, *Detailed Plan for RCRA Clean Closure of Building 673-T3 MCAS El Toro and Building 248 MCAS Tustin*, June.

OHM Remediation Services Corp., 1997a, *Final Supplemental Work Plan Closure of Various Temporary Accumulation Areas and RCRA Facility Assessment Sites, Marine Corps Air Station El Toro, Santa Ana, California*, March.

OHM Remediation Services Corp , 1997b, *Technical Memorandum Groundwater Monitoring Report, Petroleum Storage Facilities at Various Locations, Marine Corps Air Station El Toro, Santa Ana, California*, November.

OHM, see OHM Remediation Services Corp.

RCRA Part B Permit for MCAS El Toro, California, June 1992.

State of California, Water Resources Control Board, 1989, *Leaking Underground Fuel Tank Field Manual. Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure*.

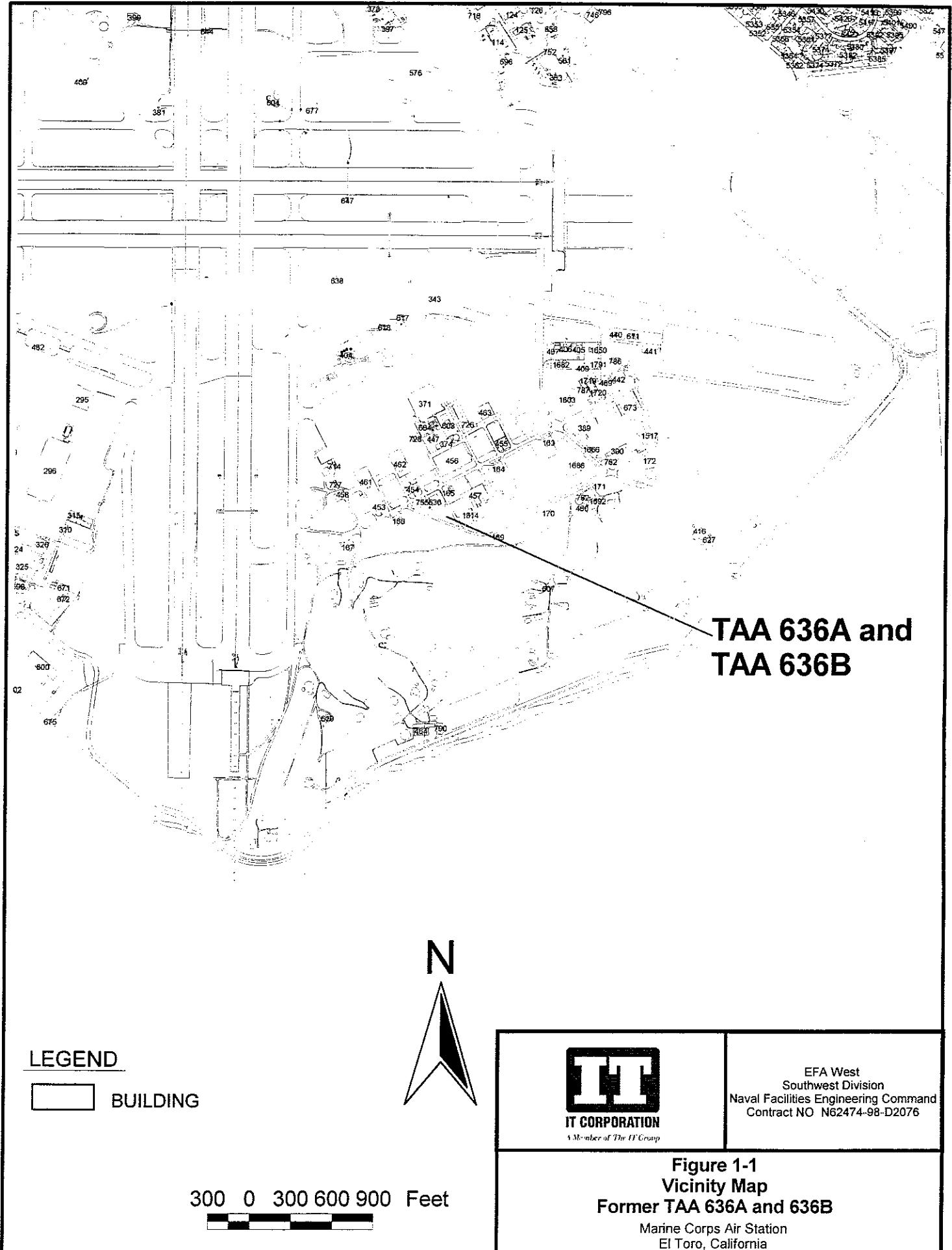
Southwest Division, 2002, *Closure of Various Temporary Accumulation Areas and RCRA Facility Assessment Sites, Marine Corps Air Station, El Toro, Santa Ana, California*, January.

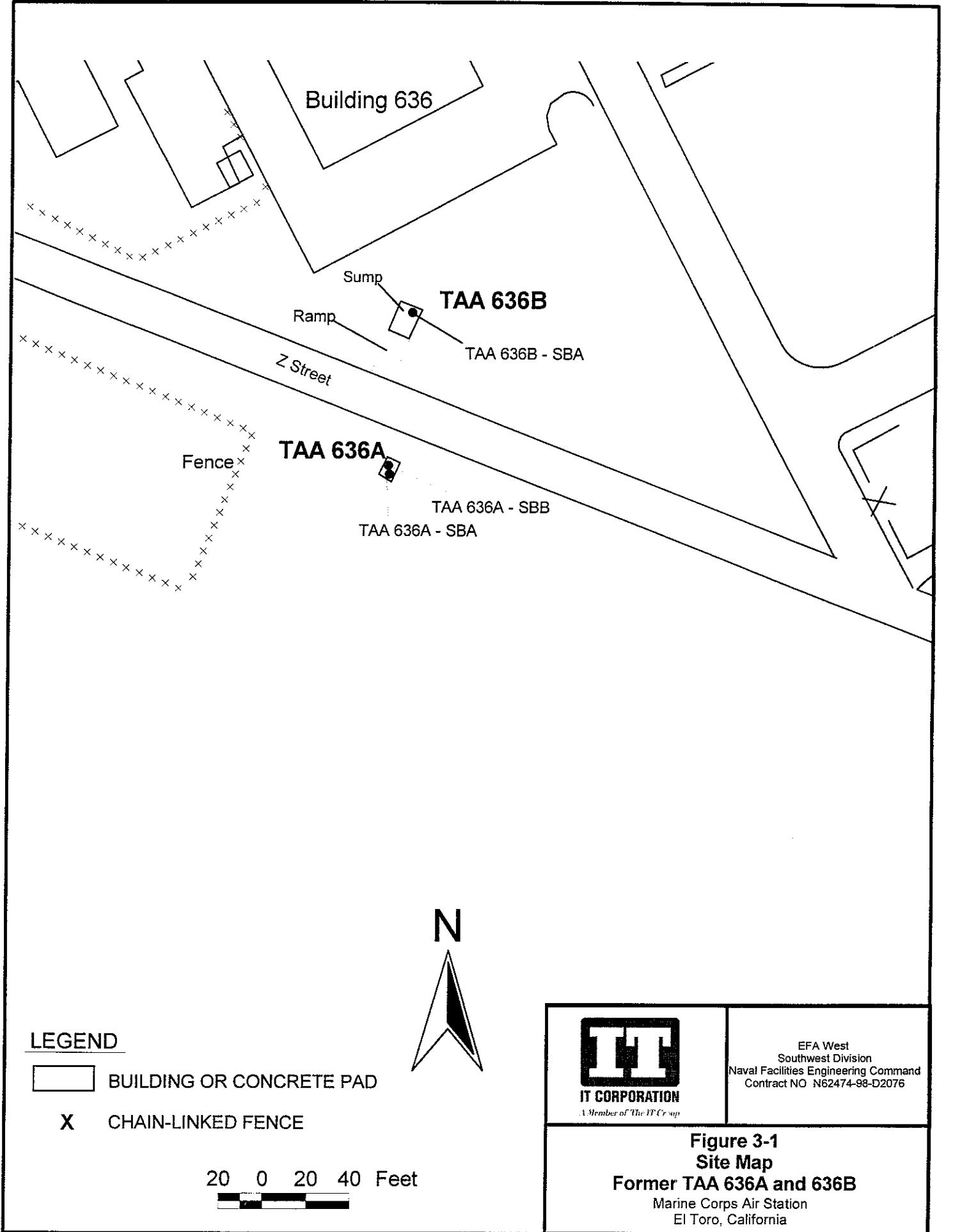
SWDIV, see Southwest Division, Naval Facilities Engineering Command.

U.S. Environmental Protection Agency, 1994, *National Functional Guidelines for Organic and Inorganic Data Review*, December.

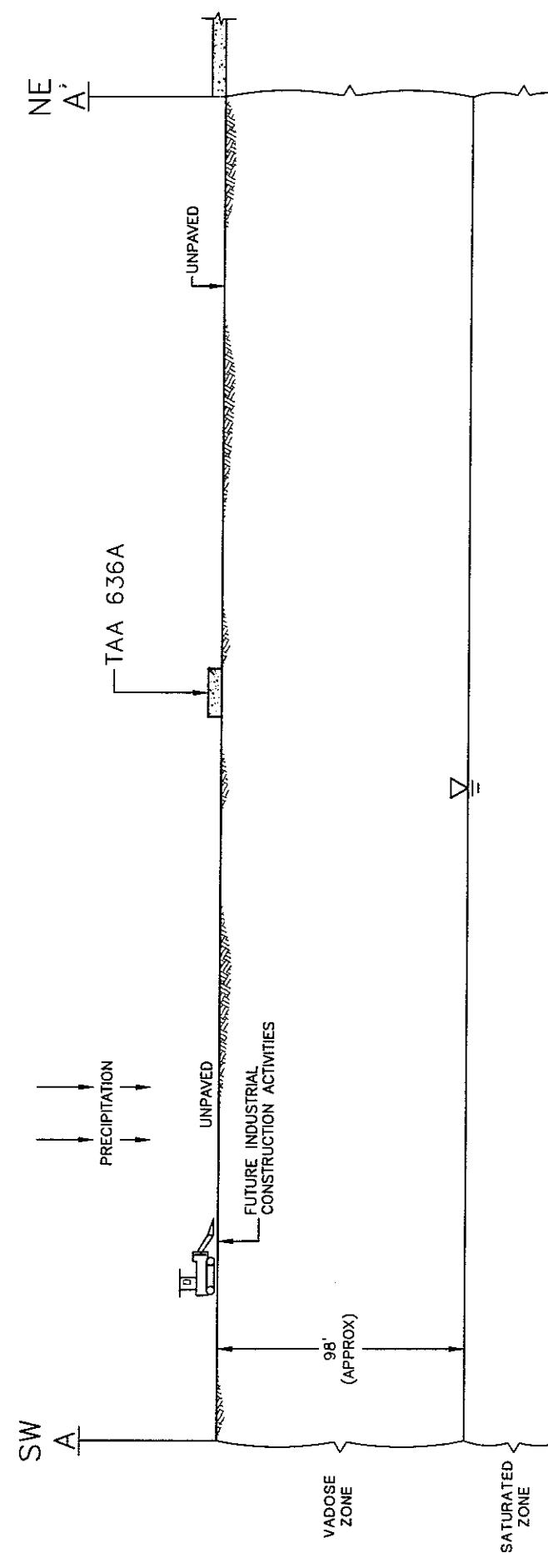
U.S. Environmental Protection Agency, 2002, Region IX Preliminary Remediation Goals (PRGs), 1 November.

## **FIGURES**





DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
RP	10/24/02		818655-A30

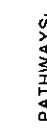


EXPLANATION:

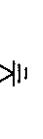
RECEPTORS:



PATHWAYS:

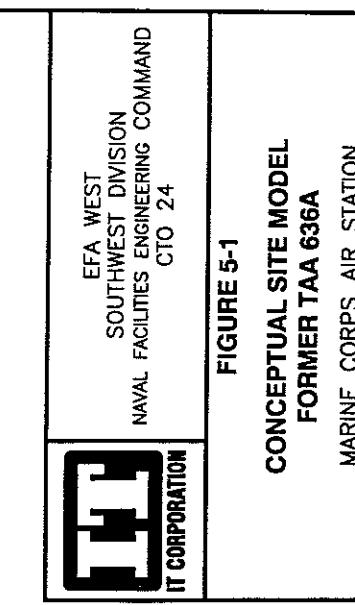


PRECIPITATION:



REFERENCE:

103M2088.DWG



Oct 24, 2002 - 17:51:19 INIT CORP\EFA\_West\818655\818655A31.dwg

Oct 24, 2002 - 17:51:19 INIT CORP\EFAC\_Vest\818655\818655A31.dwg

DRAWN BY RP	CHECKED BY 10/24/02	APPROVED BY	DRAWING NUMBER 818655-A31
----------------	------------------------	-------------	------------------------------

```

graph TD
    A[PRIMARY RELEASE MECHANISM] --> B[SECONDARY SOURCE]
    A --> C[SOIL]
    A --> D[FUEL, MOTOR OIL]
    A --> E[OTHER CHEMICAL PRODUCTS]
    
    B --> F[SOIL EROSION OF VOLATILE COMPOUNDS FROM SOIL]
    B --> G[VAPOR INHALATION]
    B --> H[GROUNDWATER (TAP WATER)]
    B --> I[LEACHING]
    
    C --> F
    C --> G
    
    D --> F
    
    E --> F
    
    F --> J[INGESTION  
DERMAL CONTACT]
    F --> K[VAPOR  
INHALATION  
PARTICULATE  
INHALATION]
    F --> L[ADDRESSSED UNDER  
BASEWIDE CLEANUP]
    
    G --> J
    G --> K
    
    H --> J
    H --> K
    
    I --> J
    I --> K
    
    J --> M[HUMAN RECEPTORS]
    K --> M
    
    M[RESIDENT ADULT] --- N[X]
    M[RESIDENT CHILD] --- O[X]
    M[INDUSTRIAL] --- P[X]
  
```

**EXPLANATION:**

- X COMPLETE PATHWAY

**REFERENCE:**  
103G2089.DXF

**FIGURE 5-2**  
**POTENTIAL MIGRATION PATHWAYS,  
EXPOSURE ROUTES AND RECEPTORS**  
**FORMER TAA 636A**  
**MARINE CORPS AIR STATION**

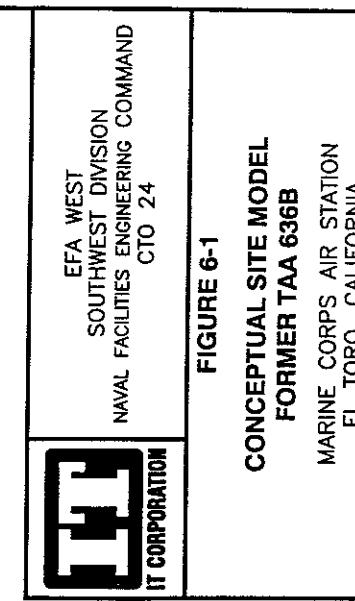
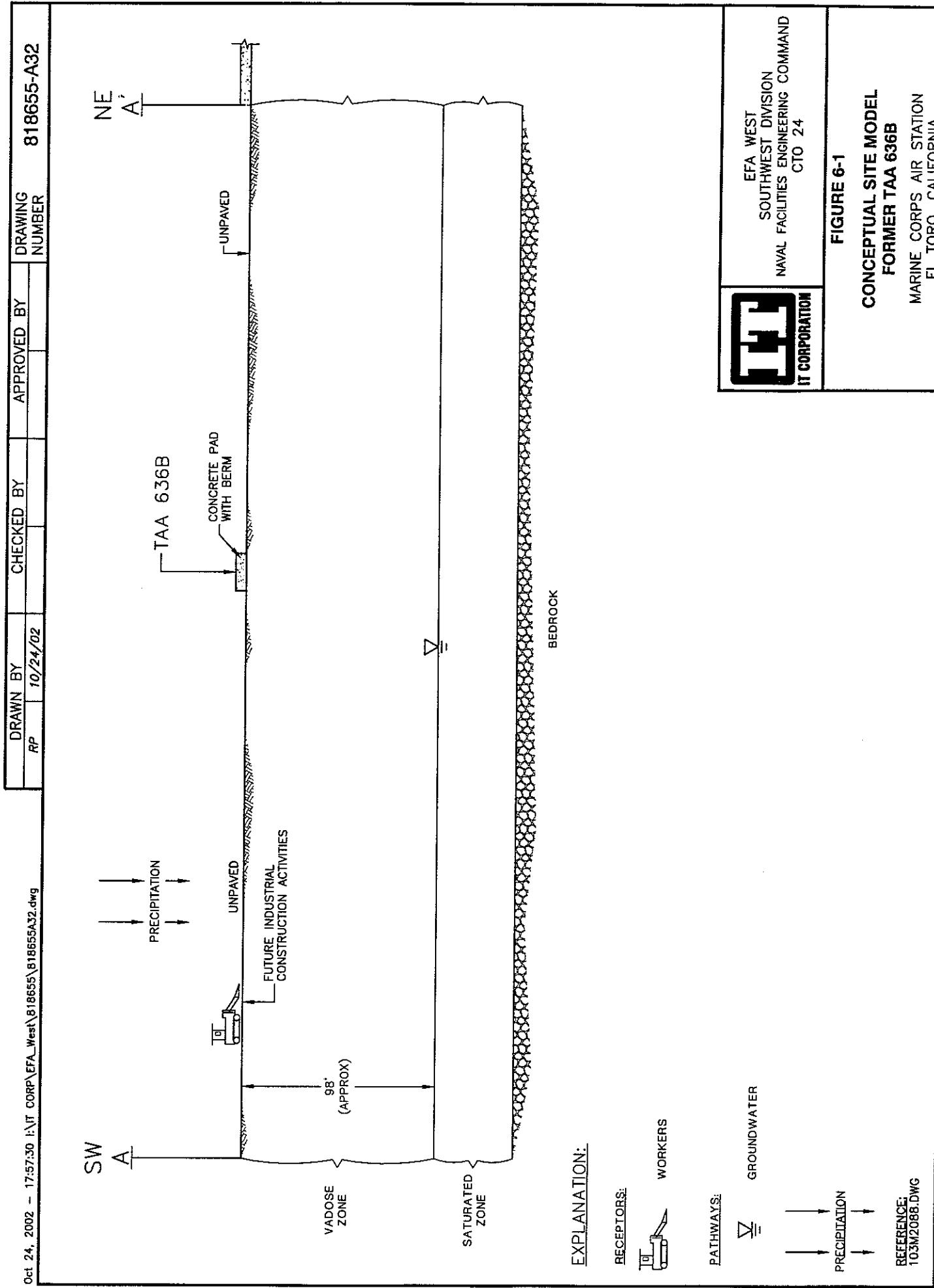
**EFA WEST**  
**SOUTH-WEST DIVISION**  
**NAVAL FACILITIES ENGINEERING COMMAND**  
**CTO 24**

**IT CORPORATION**



**EXPOSURE ROUTES AND RECEPTORS**  
**FORMER TAA 636A**  
MARINE CORPS AIR STATION  
EL TORO, CALIFORNIA

REFERENCE:  
103C2089.DXF



Oct 24, 2002 - 17:52:14 INT CDRP\EFA\_West\818655\818655A33.dwg

DRAWN BY RP	CHECKED BY 10/24/02	APPROVED BY	DRAWING NUMBER 818655-A33
----------------	------------------------	-------------	------------------------------

CHEMICAL SOURCES	PRIMARY RELEASE MECHANISM	SECONDARY SOURCE	SECONDARY RELEASE MECHANISM	HUMAN RECEPTORS	
				RESIDENT ADULT	RESIDENT CHILD
FUEL, MOTOR OIL	ACCIDENTAL RELEASE TO SURFACE/SOIL	SOIL	SOL EROSION DIFFUSION OF VOLATILE COMPOUNDS FROM SOIL	INGESTION DERMAL CONTACT	X X
OTHER CHEMICAL PRODUCTS		LEACHING		VAPOR INHALATION PARTICULATE INHALATION	X X
		GROUNDWATER (TAP WATER)			
				ADDRESSED UNDER BASEWIDE CLEANUP	

```

graph TD
    F[FUEL, MOTOR OIL] --> AR[ACCIDENTAL RELEASE TO SURFACE/SOIL]
    OC[OTHER CHEMICAL PRODUCTS] --> AR
    AR --> S[SOIL]
    S --> SE[SOIL EROSION DIFFUSION OF VOLATILE COMPOUNDS FROM SOIL]
    SE --> I[INGESTION  
DERMAL CONTACT]
    SE --> VI[VAPOR INHALATION  
PARTICULATE INHALATION]
    I --> RA[RESIDENT ADULT]
    I --> RC[RESIDENT CHILD]
    I --> IIND[INDUSTRIAL]
    VI --> RA
    VI --> RC
    VI --> IIND
    L[LEACHING] --> GW[GROUNDWATER (TAP WATER)]
    GW --> AB[ADDRESSED UNDER BASEWIDE CLEANUP]
  
```

**EXPLANATION:**

- X COMPLETE PATHWAY

**REFERENCE:**  
103C2089.BXF

**FIGURE 6-2**  
**POTENTIAL MIGRATION PATHWAYS,**  
**EXPOSURE ROUTES AND RECEPTORS**  
**FORMER TAA 636B**  
**NAVAL FACILITIES ENGINEERING COMMAND**  
**CTO 24**  
**EFA WEST**  
**SOUTHWEST DIVISION**  
**MARINE CORPS AIR STATION**

## TABLES

**Table 4-1**  
**Analytical Results for Soil Samples — TAA 636A and 636B, El Toro**

Sample Identification	Location Code	818655-B3091 TAA636A-A1 09/19/02	818655-B3092 TAA636A-A2 09/19/02	818655-B3093 TAA636A-B1 09/19/02	818655-B3094 TAA636A-B2 09/19/02	818655-B3095 TAA636B-SUMP1 09/19/02	818655-B3096 TAA636B-SUMP2 09/19/02
Date Sampled	Depth (feet below ground surface)	Unit	Background	1.5	3	1.5	3
<i>CA LUFT 8015M (TPH)</i>							
Diesel	mg/kg	NE	11 U 18 U	11 U 9.8 U	11 U 12 U	11 U 10 U	11 U 9.5 U
Gasoline	mg/kg	NE	14800	13700	12100	8070	6500
<i>EPA 6010B and 7000 (Metals)</i>							
Aluminum	mg/kg	3.06	2.46 J	5.51 UB	5.45 UB	5.33 UB	5.59 UB
Antimony	mg/kg	6.86	2.38	2.55	1.77	1.64	2.87
Arsenic	mg/kg	173	88.6	99.5	70.7	65.1	108
Barium	mg/kg	0.669	.219 U	.22 U	.218 U	.213 U	.224 U
Beryllium	mg/kg	2.35	.538 J	.551 U	.436 J	.533 U	.614
Cadmium	mg/kg	46000	3940	3820	2710	2790	8710
Calcium	mg/kg	26.9	14.4	11.7	9.03	7.69	13.7
Chromium	mg/kg	6.98	4.47	4.1	2.81	2.65	4.25
Cobalt	mg/kg	10.5	8.69	6.7	5.85	5.07	8.51
Copper	mg/kg	18400	14100	12800	9320	8720	14100
Iron	mg/kg	15.1	2.76	2.78	2.26	2.21	3.02
Lead	mg/kg	8370	5180	5080	3310	3180	6090
Magnesium	mg/kg	291	249	179	160	147	209
Manganese	mg/kg	NE	.109 U	.11 U	.109 U	.107 U	.112 U
Mercury	mg/kg	NE	.902 J	.551 U	.545 U	.533 U	.559 U
Molybdenum	mg/kg	15.3	11.2	8.75	7.48	6.93	10.5
Nickel	mg/kg	4890	2870	1730	1630	1320	2420
Potassium	mg/kg	0.32	1.97 B	2.15 B	1.36 B	1.37 B	2.18 B
Selenium	mg/kg	0.539	2.19 UB	2.2 UB	2.18 UB	2.13 UB	2.24 UB
Silver	mg/kg	405	181	199	92.7 J	112	165
Sodium	mg/kg	0.42	.767 B	.34 J	1.09 UB	1.07 UB	1.12 UB
Thallium	mg/kg	71.8	37.1	34	24.8	21.8	37.9
Vanadium	mg/kg	77.9	41	35.6	30.5	28.3	42.7
Zinc	mg/kg	NE	NE	NE	NE	NE	NE
<i>EPA 8082 (PCBs)</i>							
Pcb-1016	mg/kg	NE	.055 U	.055 U	.054 U	.053 U	.056 U
Pcb-1221	mg/kg	NE	.055 U	.055 U	.054 U	.053 U	.056 U
Pcb-1232	mg/kg	NE	.055 U	.054 U	.054 U	.053 U	.057 U
Pcb-1242	mg/kg	NE	.055 U	.055 U	.054 U	.053 U	.056 U
Pcb-1248	mg/kg	NE	.055 U	.055 U	.054 U	.053 U	.057 U

**Table 4-1**  
**Analytical Results for Soil Samples — TAA 636A and 636B, El Toro**

Sample Identification	Location Code	818655-B3091 TAA636A-A1 09/19/02	818655-B3092 TAA636A-A2 09/19/02	818655-B3093 TAA636A-B1 09/19/02	818655-B3094 TAA636A-B2 09/19/02	818655-B3095 TAA636B-SUMP1 09/19/02	818655-B3096 TAA636B-SUMP2 09/19/02
Date Sampled	Depth (feet below ground surface)	Unit	Background	1.5	3	1.5	3
Pcb-1254	mg/kg	NE	.055 U	.055 U	.054 U	.053 U	.056 U
Pcb-1260	mg/kg	NE	.055 U	.055 U	.054 U	.053 U	.056 U
<i>EPA 8081A (Pesticides)</i>							
4,4'-Ddd	mg/kg	0.0361	.0044 UJB	.0044 UJB	.0044 UJB	.0043 UJB	.0045 UJB
4,4'-Dde	mg/kg	0.145	.0044 UJB	.0044 UJB	.0044 UJB	.0043 UJB	.0045 UJB
4,4'-Ddt	mg/kg	0.236	.0044 U	.0044 U	.0044 U	.0043 U	.0045 U
Aldrin	mg/kg	NE	.0022 U	.0022 U	.0022 U	.0021 U	.0022 U
Alpha-Bhc	mg/kg	NE	.0022 U	.0022 U	.0022 U	.0021 U	.0022 U
Alpha-Chlordane	mg/kg	0.00224	.0022 U	.0022 U	.0022 U	.0021 U	.0022 U
Beta-Bhc	mg/kg	NE	.0022 U	.0022 U	.0022 U	.0021 U	.0022 U
Delta-Bhc	mg/kg	NE	.0022 U	.0022 U	.0022 U	.0021 U	.0022 U
Dieldrin	mg/kg	0.0199	.0044 U	.0044 U	.0044 U	.0043 U	.0045 U
Endosulfan I	mg/kg	0.000179	.0044 UJB	.0044 UJB	.0044 UJB	.0043 UJB	.0045 UJB
Endosulfan II	mg/kg	0.00222	.0044 UJB	.0044 UJB	.0044 UJB	.0043 UJB	.0045 UJB
Endosulfan Sulfate	mg/kg	0.0031	.0044 UJB	.0044 UJB	.0044 UJB	.0043 UJB	.0045 UJB
Endrin	mg/kg	0.00222	.0033 UJB	.0033 UJB	.0033 UJB	.0032 UJB	.0034 UJB
Endrin Aldehyde	mg/kg	0.00222	.0044 UJB	.0044 UJB	.0044 UJB	.0043 UJB	.0045 UJB
Endrin Ketone	mg/kg	NE	.0033 U	.0033 U	.0033 U	.0032 U	.0034 U
Gamma-Bhc	mg/kg	NE	.0022 U	.0022 U	.0022 U	.0021 U	.0022 U
Gamma-Chlordane	mg/kg	0.0027	.0022 U	.0022 U	.0022 U	.0021 U	.0022 U
Heptachlor	mg/kg	NE	.0022 U	.0022 U	.0022 U	.0021 U	.0022 U
Heptachlor Epoxide	mg/kg	NE	.0022 U	.0022 U	.0022 U	.0021 U	.0022 U
Methoxychlor	mg/kg	NE	.022 UJ	.022 UJ	.022 UJ	.021 UJ	.022 UJ
Toxaphene	mg/kg	NE	.11 U	.11 U	.11 U	.11 U	.11 U
<i>EPA 8270C (SVOCs)</i>							
1,2,4-Trichlorobenzene	ug/kg	NE	360 U	360 U	360 U	350 U	370 U
1,2-Dichlorobenzene	ug/kg	NE	360 U	360 U	360 U	350 U	370 U
1,3-Dichlorobenzene	ug/kg	NE	360 U	360 U	360 U	350 U	380 U
1,4-Dichlorobenzene	ug/kg	NE	360 U	360 U	360 U	350 U	380 U
2,4,5-Trichlorophenol	ug/kg	NE	910 U	910 U	900 U	880 U	930 U
2,4,6-Trichlorophenol	ug/kg	NE	360 U	360 U	360 U	350 U	370 U
2,4-Dichlorophenol	ug/kg	NE	360 U	360 U	360 U	350 U	370 U
2,4-Dimethylphenol	ug/kg	NE	910 U	910 U	900 U	880 U	930 U
2,4-Dinitrophenol	ug/kg	NE					950 U

**Table 4-1**  
**Analytical Results for Soil Samples — TAA 636A and 636B, El Toro**

Sample Identification Location Code Date Sampled Depth (feet below ground surface)	818655-B3091 TAA636A-A1 09/19/02 1.5	818655-B3092 TAA636A-A2 09/19/02 3	818655-B3093 TAA636A-B1 09/19/02 1.5	818655-B3094 TAA636A-B2 09/19/02 3	818655-B3095 TAA636B-SUMP1 09/19/02 1.5	818655-B3096 TAA636B-SUMP2 09/19/02 3
2,4-Dinitrotoluene	ug/kg NE	360 U	360 U	360 U	350 U	370 U
2,6-Dinitrotoluene	ug/kg NE	360 U	360 U	360 U	350 U	380 U
2-Chloronaphthalene	ug/kg NE	360 U	360 U	360 U	350 U	380 U
2-Chlorophenol	ug/kg NE	360 U	360 U	360 U	350 U	380 U
2-Methylnaphthalene	ug/kg NE	360 U	360 U	360 U	350 U	380 U
2-Methylphenol	ug/kg NE	360 U	360 U	360 U	350 U	380 U
2-Nitroaniline	ug/kg NE	910 U	910 U	900 U	880 U	930 U
2-Nitrophenol	ug/kg NE	360 U	360 U	360 U	350 U	380 U
3,3'-Dichlorobenzidine	ug/kg NE	360 U	360 U	360 U	350 U	370 U
3-Nitroaniline	ug/kg NE	910 U	910 U	900 U	880 U	930 U
4,6-Dinitro-2-Methylphenol	ug/kg NE	910 U	910 U	900 U	880 U	930 U
4-Bromophenyl Phenyl Ether	ug/kg NE	360 U	360 U	360 U	350 U	380 U
4-Chloro-3-Methylphenol	ug/kg NE	360 U	360 U	360 U	350 U	380 U
4-Chloronaphthalene	ug/kg NE	360 U	360 U	360 U	350 U	380 U
4-Chlorophenyl Phenyl Ether	ug/kg NE	360 U	360 U	360 U	350 U	380 U
4-Methylphenol	ug/kg NE	360 U	360 U	360 U	350 U	380 U
4-Nitroaniline	ug/kg NE	910 U	910 U	900 U	880 U	930 U
4-Nitrophenol	ug/kg NE	910 U	910 U	900 U	880 U	930 U
Acenaphthene	ug/kg NE	360 U	360 U	360 U	350 U	380 U
Acenaphthylene	ug/kg NE	360 U	360 U	360 U	350 U	380 U
Anthracene	ug/kg NE	360 U	360 U	360 U	350 U	370 U
Benzol(A)Anthracene	ug/kg 22	360 UB	360 UB	360 UB	350 UB	370 UB
Benzol(A)Pyrene	ug/kg 27	36 UB	36 UB	36 UB	35 UB	37 UB
Benzol(B)Fluoranthene	ug/kg 28	360 UB	360 UB	360 UB	350 UB	370 UB
Benzol(Gh)Perylene	ug/kg NE	360 U	360 U	360 U	350 U	370 U
Benzol(K)Fluoranthene	ug/kg 24	360 UB	360 UB	360 UB	350 UB	370 UB
Bis(2-Chloroethoxy)Methane	ug/kg NE	360 U	360 U	360 U	350 U	370 U
Bis(2-Chloroethyl)Ether	ug/kg NE	36 U	36 U	36 U	35 U	37 U
Bis(2-Chloroisopropyl)Ether	ug/kg NE	360 U	360 U	360 U	350 U	370 U
Bis(2-Ethylhexyl)Phthalate	ug/kg NE	360 U	360 U	360 U	350 U	370 U
Butyl Benzyl Phthalate	ug/kg NE	360 U	360 U	360 U	350 U	370 U
Chrysene	31 ug/kg NE	360 UB	360 UB	360 UB	350 UB	370 UB
Di-N-Butyl Phthalate	ug/kg NE	360 U	360 U	360 U	350 U	370 U
Di-N-Octyl Phthalate	ug/kg NE	360 U	360 U	360 U	350 U	370 U

**Table 4-1**  
**Analytical Results for Soil Samples — TAA 636A and 636B, El Toro**

Sample Identification	Location Code	818655-B3091	818655-B3092	818655-B3093	818655-B3094	818655-B3095	818655-B3096
Date Sampled		TAA636A-A1 09/19/02	TAA636A-A2 09/19/02	TAA636A-B1 09/19/02	TAA636A-B2 09/19/02	TAA636B-SUMP1 09/19/02	TAA636B-SUMP2 09/19/02
Depth (feet below ground surface)		1.5	3	1.5	3	1.5	3
	Unit	Background	8				
Dibenz(a,H)Anthracene	ug/kg	36 UB	36 UB	36 UB	35 UB	37 UB	38 UB
Dibenzofuran	ug/kg	360 U	360 U	360 U	350 U	370 U	380 U
Diethyl Phthalate	ug/kg	360 U	360 U	360 U	350 U	370 U	380 U
Dimethyl Phthalate	ug/kg	360 U	360 U	360 U	350 U	370 U	380 U
Fluoranthene	ug/kg	45	360 UB	360 UB	360 UB	350 UB	380 UB
Fluorene	ug/kg	NE	360 U	360 U	360 U	350 U	380 U
Hexachlorobenzene	ug/kg	NE	82 U	83 U	82 U	80 U	84 U
Hexachlorobutadiene	ug/kg	NE	360 U	360 U	360 U	350 U	386 U
Hexachlorocyclopentadiene	ug/kg	NE	360 U	360 U	360 U	350 U	380 U
Hexachloroethane	ug/kg	NE	360 U	360 U	360 U	350 U	380 U
Indeno(1,2,3-CD)Pyrene	ug/kg	21	38 UB	39 UB	38 UB	37 UB	370 U
N-Nitroso-Di-N-Propylamine	ug/kg	NE	36 U	36 U	36 U	35 U	39 UB
N-Nitrosodiphenylamine	ug/kg	NE	360 U	360 U	360 U	350 U	370 U
Naphthalene	ug/kg	NE	360 U	360 U	360 U	350 U	380 U
Nitrobenzene	ug/kg	NE	360 U	360 U	360 U	350 U	380 U
Pentachlorophenol	ug/kg	NE	220 U	220 U	220 U	210 U	230 U
Phenanthrene	ug/kg	18	360 UB	360 UB	360 UB	350 UB	380 UB
Phenol	ug/kg	NE	360 U	360 U	360 U	350 U	380 U
Pyrene	ug/kg	41	360 UB	360 UB	360 UB	350 UB	380 UB
<i>EPA 8260B (VOCs)</i>							
1,1,1-Trichloroethane	ug/kg	NE	5.1 U	5.4 U	5.4 U	5.1 U	5.5 U
1,1,2,2-Tetrachloroethane	ug/kg	NE	5.1 U	5.4 U	5.4 U	5.1 U	5.5 U
1,1,2-Trichloroethane	ug/kg	NE	5.1 U	5.4 U	5.4 U	5.1 U	5.5 U
1,1-Dichloroethane	ug/kg	NE	5.1 U	5.4 U	5.4 U	5.1 U	5.5 U
1,1-Dichloroethene	ug/kg	NE	5.1 U	5.4 U	5.4 U	5.1 U	5.5 U
1,2-Dichloroethane	ug/kg	NE	5.1 U	5.4 U	5.4 U	5.1 U	5.5 U
1,2-Dichloropropane	ug/kg	NE	5.1 U	5.4 U	5.4 U	5.1 U	5.5 U
2-Butanone	ug/kg	NE	51 U	54 U	54 U	51 U	55 U
2-Chloroethyl Vinyl Ether	ug/kg	NE	51 U	54 U	54 U	51 U	55 U
2-Hexanone	ug/kg	NE	51 U	54 U	54 U	51 U	55 U
4-Methyl-2-Pentanone	ug/kg	NE	51 U	54 U	54 U	51 U	55 U
Acetone	ug/kg	NE	21 J	54 U	22 J	51 U	13 J
Benzene	ug/kg	NE	5.1 U	5.4 U	5.4 U	5.1 U	4.7 U
Bromodichloromethane	ug/kg	NE	5.1 U	5.4 U	5.4 U	5.1 U	4.7 U

**Table 4-1**  
**Analytical Results for Soil Samples — TAA 636A and 636B, El Toro**

Sample Identification	Location Code	818655-B3091	818655-B3092	818655-B3093	818655-B3094	818655-B3095
Date Sampled		TAA636A-A1	TAA636A-A2	TAA636A-B1	TAA636A-B2	TAA636B-SUMP1
Depth (feet below ground surface)		09/19/02	09/19/02	09/19/02	09/19/02	09/19/02
Bromoform		1.5	3	1.5	3	1.5
Bromomethane		NE	5.1 U	5.4 U	5.4 U	5.5 U
Carbon Disulfide		NE	5.1 U	5.4 U	5.4 U	5.5 U
Carbon Tetrachloride		NE	5.1 U	5.4 U	5.4 U	5.5 U
Chlorobenzene		NE	5.1 U	5.4 U	5.4 U	5.5 U
Chloroethane		NE	5.1 U	5.4 U	5.4 U	5.5 U
Chloroform		NE	5.1 U	5.4 U	5.4 U	5.5 U
Chloromethane		NE	5.1 U	5.4 U	5.4 U	5.5 U
Cis-1,2-Dichloroethene		NE	5.1 U	5.4 U	5.4 U	5.5 U
Cis-1,3-Dichloropropene		NE	5.1 U	5.4 U	5.4 U	5.5 U
Dibromoethane		NE	5.1 U	5.4 U	5.4 U	5.5 U
Ethylbenzene		NE	5.1 U	5.4 U	5.4 U	5.5 U
Methyl Tert-Butyl Ether		NE	10 U	11 U	10 U	11 U
Methylene Chloride		NE	5.1 U	5.4 U	5.4 U	5.5 U
Styrene		NE	5.1 U	5.4 U	5.4 U	5.5 U
Tetrachloroethene		NE	5.1 U	5.4 U	5.4 U	5.5 U
Toluene		NE	5.1 U	5.4 U	5.4 U	5.5 U
Trans-1,2-Dichloroethene		NE	5.1 U	5.4 U	5.4 U	5.5 U
Trans-1,3-Dichloropropene		NE	5.1 U	5.4 U	5.4 U	5.5 U
Trichloroethene		NE	5.1 U	5.4 U	5.4 U	5.5 U
Vinyl Acetate		NE	51 U	54 U	54 U	55 U
Vinyl Chloride		NE	5.1 U	5.4 U	5.4 U	5.5 U
Xylene, (Total)		NE	5.1 U	5.4 U	5.4 U	5.5 U

**Table 4-1**  
**Analytical Results for Soil Samples — TAA 636A and 636B, El Toro**

## Explanation:

B - result exceeds established background limits  
CA LUFT - California Leaking Underground Fuel Tank  
EPA - United States Environmental Protection Agency  
J - estimated value  
M - Modified  
mg/kg - milligrams per kilogram  
NA - not analyzed  
RL - reporting limit  
SVOCs - semi-volatiles  
TPH - total petroleum hydrocarbons  
U - not detected above or equal to the stated reporting limit  
UJ - the sample detection limit is an estimated value  
µg/kg - micrograms per kilogram  
UST - underground storage tanks

**Table 4-2**  
**Analytical Results for QC Samples — TAA 636A and 636B, El Toro**

Sample Identification	818655-B3102		
Location Code	EQUIPMENT RINSATE		
Date Sampled	09/19/02		
	TPH	Unit	TRIP BLANK
Diesel		mg/L	.094 U
Gasoline		mg/L	.021 J
<i>METALS</i>			
Aluminum	ug/L	500 U	NA
Antimony	ug/L	500 U	NA
Arsenic	ug/L	5 U	NA
Barium	ug/L	100 U	NA
Beryllium	ug/L	10 U	NA
Cadmium	ug/L	5 U	NA
Calcium	ug/L	88.2 J	NA
Chromium	ug/L	50 U	NA
Cobalt	ug/L	50 U	NA
Copper	ug/L	50 U	NA
Iron	ug/L	1000 U	NA
Lead	ug/L	5 U	NA
Magnesium	ug/L	1000 U	NA
Manganese	ug/L	1000 U	NA
Mercury	ug/L	20 U	NA
Molybdenum	ug/L	.113 J	NA
Nickel	ug/L	100 U	NA
Potassium	ug/L	150 U	NA
Selenium	ug/L	5000 U	NA
Silver	ug/L	5 U	NA
Sodium	ug/L	50 U	NA
Thallium	ug/L	380 J	NA
Vanadium	ug/L	10 U	NA
Zinc	ug/L	100 U	NA
<i>PCBS</i>			
Pcb-1016	ug/L	.97 U	NA
Pcb-1221	ug/L	.97 U	NA
Pcb-1232	ug/L	.97 U	NA
Pcb-1242	ug/L	.97 U	NA
Pcb-1248	ug/L	.97 U	NA
Pcb-1254	ug/L	.97 U	NA

**Table 4-2**  
**Analytical Results for QC Samples — TAA 636A and 636B, El Toro**

Sample Identification Location Code Date Sampled	Pcb-1260	PESTICIDES	818655-B3102		818655-B3090 TRIP BLANK 09/19/02
			Unit	ug/L	
4,4'-Ddd		ug/L		.19 UJ	NA
4,4'-Dde		ug/L		.19 UJ	NA
4,4'-Ddt		ug/L		.19 U	NA
Aldrin		ug/L		.097 U	NA
Alpha-Bhc		ug/L		.097 U	NA
Alpha-Chlordane		ug/L		.097 U	NA
Beta-Bhc		ug/L		.097 U	NA
Delta-Bhc		ug/L		.097 U	NA
Dieldrin		ug/L		.19 U	NA
Endosulfan I		ug/L		.097 U	NA
Endosulfan II		ug/L		.19 U	NA
Endosulfan Sulfate		ug/L		.19 U	NA
Endrin		ug/L		.097 UJ	NA
Endrin Aldehyde		ug/L		.19 U	NA
Endrin Ketone		ug/L		.097 U	NA
Gamma-Bhc		ug/L		.097 U	NA
Gamma-Chlordane		ug/L		.097 U	NA
Heptachlor		ug/L		.097 U	NA
Heptachlor Epoxide		ug/L		.097 U	NA
Methoxychlor		ug/L		.97 U	NA
Toxaphene		ug/L		2.9 U	NA
<b>VOLATILES</b>					
1,1,1-Trichloroethane		ug/L		5 U	5 U
1,1,2,2-Tetrachloroethane		ug/L		5 U	5 U
1,1,2-Trichloroethane		ug/L		5 U	5 U
1,1-Dichloroethane		ug/L		5 U	5 U
1,1-Dichloroethene		ug/L		5 U	5 U
1,2-Dichloroethane		ug/L		5 U	5 U
1,2-Dichloropropane		ug/L		5 U	5 U
2-Butanone		ug/L		50 U	50 U
2-Chloroethyl Vinyl Ether		ug/L		50 U	50 U
2-Hexanone		ug/L		50 U	50 U
4-Methyl-2-Pentanone		ug/L		50 U	50 U

**Table 4-2**  
**Analytical Results for QC Samples — TAA 636A and 636B, EI Toro**

Sample Identification Location Code Date Sampled	818655-B3102		818655-B3090 TRIP BLANK 09/19/02	
	EQUIPMENT RINSATE 09/19/02		09/19/02	
	Unit	Unit	Unit	Unit
Acetone	ug/L	50 U	50 U	50 U
Benzene	ug/L	5 U	5 U	5 U
Bromodichloromethane	ug/L	5 U	5 U	5 U
Bromoform	ug/L	5 U	5 U	5 U
Bromonethane	ug/L	5 U	5 U	5 U
Carbon Disulfide	ug/L	5 U	5 U	5 U
Carbon Tetrachloride	ug/L	5 U	5 U	5 U
Chlorobenzene	ug/L	5 U	5 U	5 U
Chloroethane	ug/L	5 U	5 U	5 U
Chloroform	ug/L	5 U	5 U	5 U
Chloromethane	ug/L	5 U	5 U	5 U
Cis-1,2-Dichloroethene	ug/L	5 U	5 U	5 U
Cis-1,3-Dichloropropene	ug/L	5 U	5 U	5 U
Dibromochloromethane	ug/L	5 U	5 U	5 U
Ethylbenzene	ug/L	10 U	10 U	10 U
Methyl Ter-Butyl Ether	ug/L	5 U	5 U	2.1 U
Methylene Chloride	ug/L	5 U	5 U	5 U
Styrene	ug/L	5 U	5 U	5 U
Tetrachloroethene	ug/L	5 U	5 U	5 U
Toluene	ug/L	5 U	5 U	5 U
Trans-1,2-Dichloroethene	ug/L	5 U	5 U	5 U
Trans-1,3-Dichloropropene	ug/L	5 U	5 U	5 U
Trichloroethene	ug/L	5 U	5 U	5 U
Vinyl Acetate	ug/L	50 U	50 U	50 U
Vinyl Chloride	ug/L	5 U	5 U	5 U
Xylene, (Total)	ug/L	5 U	5 U	5 U

**Table 4-2**  
**Analytical Results for QC Samples — TAA 636A and 636B, El Toro**

Explanation:

B - result exceeds established background limits  
CA LUFT - California Leaking Underground Fuel Tank  
EPA - United States Environmental Protection Agency  
J - estimated value  
M - Modified  
mg/kg - milligrams per kilogram  
NA - not analyzed  
RL - reporting limit  
SVOCs - semi-volatiles  
TPH - total petroleum hydrocarbons  
U - not detected above or equal to the stated reporting limit  
UJ - the sample detection limit is an estimated value  
µg/kg - micrograms per kilogram  
UST - underground storage tanks

**Table 5-1**  
**Residential Risk Screening Worksheet for Soil**  
**TAA 636A, Marine Corps Air Station, El Toro**

Detected Chemical	TAA 636A Soil Concentration (mg/kg)	MCAS El Toro Background Concentration <sup>A</sup> (mg/kg)	CANCER			NON-CANCER		
			Residential PRG <sup>B</sup> (mg/kg)	TAA 636A Maximum	MCAS El Toro Background Ratio <sup>C</sup>	Residential PRG <sup>E</sup> (mg/kg)	TAA 636A Maximum	MCAS El Toro Background Ratio <sup>F</sup>
<b>METALS</b>								
Aluminum	13700	14800	NE	NE	NE	7.6E+04	1.80E-01	1.95E-01
Arsenic	2.55	6.86	3.9E-01	6.54E+00	6.54E+00	2.2E+01	1.16E-01	3.12E-01
Barium	99.5	173	NE	NE	NE	5.4E+03	1.84E-02	3.20E-02
Chromium	14.4	26.9	2.1E+02	6.86E-02	6.86E-02	NE	NE	NE
Cobalt	4.47	6.98	NE	NE	NE	4.7E+03	9.51E-04	1.49E-03
Copper	8.69	10.5	NE	NE	NE	2.9E+03	3.00E-03	3.62E-03
Iron	14100	18400	NE	NE	NE	2.3E+04	6.13E-01	8.00E-01
Lead	2.78	15.1	NE	NE	NE	4.0E+02	6.95E-03	3.78E-02
Manganese	249	291	NE	NE	NE	1.8E+03	1.38E-01	1.62E-01
Nickel	8.75	15.3	NE	NE	NE	1.6E+03	5.47E-03	9.56E-03
Selenium	(2.15)	0.32	NE	NE	NE	3.9E+02	5.51E-03	8.21E-04
Vanadium	37.1	71.8	NE	NE	NE	5.5E+02	6.75E-02	1.31E-01
Zinc	41	77.9	NE	NE	NE	2.3E+04	1.78E-03	3.39E-03
Subtotal sum of ratios				6.61E-00	6.61E+00	9.77E-01	1.69E+00	
<b>MCAS EL TORO BACKGROUND RISK RATIOS</b>								
			CANCER RISK	6.61E-06	HAZARD INDEX			
			CANCER RISK	6.61E-06	HAZARD INDEX			
			NET CANCER RISK	<1 x 10 <sup>6</sup>	HAZARD INDEX			
<b>TAA 636A RISK LESS BACKGROUND RISK (NET RISK)</b>								
			CANCER RISK	6.61E-06	HAZARD INDEX			
			NET CANCER RISK	<1 x 10 <sup>6</sup>	HAZARD INDEX			

<sup>A</sup> MCAS El Toro Background upper threshold limit concentrations from Final Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996.

<sup>B</sup> Residential soil PRG for cancer from the EPA Region 9, November, 2002 list.

<sup>C</sup> The Ratio is determined by dividing the Concentration by the respective PRG.

<sup>D</sup> Where the background concentration exceeds the maximum concentration the background ratio was defaulted to the maximum ratio.

<sup>E</sup> Residential soil PRG for non-cancer from the EPA Region 9, November, 2002 list.

<sup>F</sup> The Ratio is determined by dividing the Concentration by the respective PRG. No ratios were calculated for chemicals detected below background levels.

mg/kg - Milligrams per kilogram.

PRG - Preliminary remediation goal.

**Table 5-2**  
**Industrial Risk Screening Worksheet for Soil**  
**TAA 636A, Marine Corps Air Station, El Toro**

Detected Chemical	TAA 10 Soil Concentration (mg/kg)	MCAS El Toro Background Concentration <sup>A</sup> (mg/kg)	CANCER			NON-CANCER		
			Industrial PRG <sup>B</sup> (mg/kg)	TAA 636A Maximum	MCAS El Toro Background Ratio <sup>C</sup>	Industrial PRG <sup>E</sup> (mg/kg)	TAA 636A Maximum	MCAS El Toro Background Ratio <sup>F</sup>
<b>METALS</b>								
Aluminum	13700	14800	NE	NE	NE	7.6E+04	1.80E-01	1.95E-01
Arsenic	2.55	6.86	2.7E+00	9.44E-01	9.44E-01	2.2E+01	1.16E-01	3.12E-01
Barium	99.5	173	NE	NE	NE	5.4E+03	1.84E-02	3.20E-02
Chromium	14.4	26.9	4.5E+02	3.20E-02	3.20E-02	NE	NE	NE
Cobalt	4.47	6.98	NE	NE	NE	4.7E+03	9.51E-04	1.49E-03
Copper	8.69	10.5	NE	NE	NE	2.9E+03	3.00E-03	3.62E-03
Iron	14100	18400	NE	NE	NE	1.0E+05	1.41E-01	1.84E-01
Lead	2.78	15.1	NE	NE	NE	7.5E+02	3.71E-03	2.01E-02
Manganese	249	291	NE	NE	NE	3.2E+04	7.78E-03	9.09E-03
Nickel	8.75	15.3	NE	NE	NE	4.1E+04	2.13E-04	3.73E-04
Selenium	2.15	0.32	NE	NE	NE	5.1E+03	4.22E-04	6.27E-05
Vanadium	37.1	71.8	NE	NE	NE	1.4E+04	2.65E-03	5.13E-03
Zinc	41	77.9	NE	NE	NE	1.0E+05	4.10E-04	7.79E-04
Subtotal sum of ratios				9.76E-01	9.76E-01		2.94E-01	7.63E-01
<b>MCAS EL TORO BACKGROUND RISK RATIOS</b>								
			CANCER RISK	9.76E-07	NON-CANCER HAZARD INDEX			
					0.76			
			TAA 636A SUMMED RISK	CANCER RISK	9.76E-07	NON-CANCER HAZARD INDEX		
				NET		0.29		
			TAA 636A RISK LESS BACKGROUND RISK (NET RISK)	CANCER RISK	<1 x 10 <sup>6</sup>			

<sup>A</sup> MCAS El Toro Background upper threshold limit concentrations from Final Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996.

<sup>B</sup> Residential soil PRG for cancer from the EPA Region 9, November, 2002 list.

<sup>C</sup> The Ratio is determined by dividing the Concentration by the respective PRG.

<sup>D</sup> Where the background concentration exceeds the maximum concentration the background ratio was defaulted to the maximum ratio.

<sup>E</sup> Residential soil PRG for non-cancer from the EPA Region 9, November, 2002 list.

<sup>F</sup> The Ratio is determined by dividing the Concentration by the respective PRG. No ratios were calculated for chemicals detected below background levels.

mg/kg - Milligrams per kilogram.

NE - Not established/No entry.

PRG - Preliminary remediation goal.

**Table 6-1**  
**Residential Risk Screening Worksheet for Soil**  
**TAA 636B, Marine Corps Air Station, El Toro**

Detected Chemical	MCAS El Toro Maximum TAA 636B Soil Concentration (mg/kg)	MCAS El Toro Background Concentration <sup>A</sup> (mg/kg)	CANCER			NON-CANCER		
			Residential PRG <sup>B</sup> (mg/kg)	TAA 636B Maximum Ratio <sup>C</sup>	MCAS El Toro Background Ratio <sup>D</sup>	Residential PRG <sup>E</sup> (mg/kg)	TAA 636B Maximum Ratio <sup>F</sup>	MCAS El Toro Background Ratio <sup>F</sup>
<b>METALS</b>								
Aluminum	13900	14800	NE	NE	NE	7.6E+04	1.83E-01	1.95E-01
Arsenic	3.23	6.86	3.9E-01	8.28E+00	2.2E+01	1.47E-01	3.12E-01	
Barium	108	173	NE	NE	NE	5.4E+03	2.00E-02	3.20E-02
Butylbenzylphthalate	2.9	NE	NE	NE	NE	1.2E+04	2.42E-04	NE
Cadmum	0.8	2.35	NE	NE	NE	3.7E+01	2.16E-02	6.35E-02
Chromium	8.67	26.9	2.1E+02	4.13E-02	NE	NE	NE	NE
Cobalt	3.98	6.98	NE	NE	NE	4.7E+03	8.47E-04	1.49E-03
Copper	5.81	10.5	NE	NE	NE	2.9E+03	2.00E-03	3.62E-03
Di-n-butylphthalate	5.5	NE	NE	NE	NE	6.1E+03	9.02E-04	NE
Iron	(2060.00)	18400	NE	NE	NE	2.3E+04	5.22E-01	8.00E-01
Lead	1.68	15.1	NE	NE	NE	4.0E+02	4.20E-03	3.78E-02
Manganese	2.10	291	NE	NE	NE	1.8E+03	1.17E-01	1.62E-01
Methylene chloride	0.005	NE	9.1E+00	5.49E-04	5.49E-04	NE	NE	NE
Nickel	5.32	15.3	NE	NE	NE	1.6E+03	3.33E-03	9.56E-03
Selenium	1.92	0.32	NE	NE	NE	3.9E+02	4.92E-03	8.21E-04
Vanadium	2.9	71.8	NE	NE	NE	5.5E+02	5.27E-02	1.31E-01
Zinc	35.1	77.9	NE	NE	NE	2.3E+04	1.53E-03	3.39E-03
Subtotal sum of ratios				8.32E+00	8.32E+00		8.98E-01	1.75E+00
<b>MCAS EL TORO BACKGROUND RISK RATIOS</b>								
TAA 636B SUMMED RISK	CANCER RISK	8.32E-06		8.32E-06		NON-CANCER HAZARD INDEX	1.75	
TAA 636B RISK LESS BACKGROUND RISK (NET RISK)	NET CANCER RISK	<1 x 10 <sup>6</sup>				NON-CANCER HAZARD INDEX	0.90	

<sup>A</sup> MCAS El Toro Background upper threshold limit concentrations from Final Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996.

<sup>B</sup> Residential soil PRG for cancer from the EPA Region 9, November, 2002 list.

<sup>C</sup> The Ratio is determined by dividing the Concentration by the respective PRG.

<sup>D</sup> Where the background concentration exceeds the maximum concentration the background ratio was defaulted to the maximum ratio.

<sup>E</sup> Residential soil PRG for non-cancer from the EPA Region 9, November, 2002 list.

<sup>F</sup> The Ratio is determined by dividing the Concentration by the respective PRG. No ratios were calculated for chemicals detected below background levels.  
mg/kg - Milligrams per kilogram.

**Table 6-1**  
**Residential Risk Screening Worksheet for Soil**  
**TAA 636B, Marine Corps Air Station, El Toro**

NE - Not established/No entry.

PRG - Preliminary remediation goal.

**Table 6-2**  
**Industrial Risk Screening Worksheet for Soil**  
**TAA 636B, Marine Corps Air Station, El Toro**

Detected Chemical	Maximum TAA 636B Soil Concentration (mg/kg)	MCAS El Toro Background Concentration <sup>A</sup> (mg/kg)	CANCER			NON-CANCER		
			Industrial PRG <sup>B</sup> (mg/kg)	TAA 636B Maximum Ratio <sup>C</sup>	MCAS El Toro Background Ratio <sup>D</sup>	Industrial PRG <sup>E</sup> (mg/kg)	TAA 636B Maximum Ratio <sup>F</sup>	MCAS El Toro Background Ratio <sup>F</sup>
<b>METALS</b>								
Aluminum	8640	14800	NE	NE	NE	7.6E+04	1.14E-01	1.95E-01
Arsenic	1.94	6.86	2.7E+00	7.19E-01	7.19E-01	2.2E+01	8.82E-02	3.12E-01
Barium	120	173	NE	NE	NE	5.4E+03	2.22E-02	3.20E-02
Butylbenzylphthalate	2.9	NE	NE	NE	NE	1.0E+05	2.90E-05	NE
Cadmium	0.8	2.35	NE	NE	NE	4.5E+02	1.78E-03	5.22E-03
Chromium	8.67	26.9	4.5E+02	1.93E-02	1.93E-02	NE	NE	NE
Cobalt	3.98	6.98	NE	NE	NE	4.7E+03	8.47E-04	1.49E-03
Copper	5.81	10.5	NE	NE	NE	2.9E+03	2.00E-03	3.62E-03
Di-n-butylphthalate	5.5	NE	NE	NE	NE	6.1E+03	9.02E-04	NE
Iron	12000.00	18400	NE	NE	NE	1.0E+05	1.20E-01	1.84E-01
Lead	1.68	15.1	NE	NE	NE	7.5E+02	2.24E-03	2.01E-02
Manganese	2.10	291	NE	NE	NE	3.2E+04	6.56E-03	9.09E-03
Methylene chloride	0.005	NE	2.1E+01	2.38E-04	2.38E-04	NE	NE	NE
Nickel	5.32	15.3	NE	NE	NE	4.1E+04	1.30E-04	3.73E-04
Selenium	1.92	0.32	NE	NE	NE	5.1E+03	3.76E-04	6.27E-05
Vanadium	29	71.8	NE	NE	NE	1.4E+04	2.07E-03	5.13E-03
Zinc	35.1	77.9	NE	NE	NE	1.0E+05	3.51E-04	7.79E-04
Subtotal sum of ratios				7.38E-01	7.38E-01		2.48E-01	7.68E-01
<b>MCAS EL TORO BACKGROUND RISK RATIOS</b>								
TAA 636B SUMMED RISK	CANCER RISK	NET CANCER RISK	<1 x 10 <sup>6</sup>	7.38E-07	7.38E-07	NON-CANCER HAZARD INDEX	0.77	0.77
TAA 636B RISK LESS BACKGROUND RISK (NET RISK)	CANCER RISK	NET CANCER RISK	<1 x 10 <sup>6</sup>	7.38E-07	7.38E-07	NON-CANCER HAZARD INDEX	0.25	0.25

<sup>A</sup> MCAS El Toro Background upper threshold limit concentrations from Final Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996.

<sup>B</sup> Residential soil PRG for cancer from the EPA Region 9, November, 2002 list.

<sup>C</sup> The Ratio is determined by dividing the Concentration by the respective PRG.

<sup>D</sup> Where the background concentration exceeds the maximum concentration the background ratio was defaulted to the maximum ratio.

<sup>E</sup> Residential soil PRG for non-cancer from the EPA Region 9, November, 2002 list.

<sup>F</sup> The Ratio is determined by dividing the Concentration by the respective PRG. No ratios were calculated for chemicals detected below background levels.  
mg/kg - Milligrams per kilogram.

**Table 6-2**  
**Industrial Risk Screening Worksheet for Soil**  
**TAA 636B, Marine Corps Air Station, El Toro**

NE - Not established/No entry.

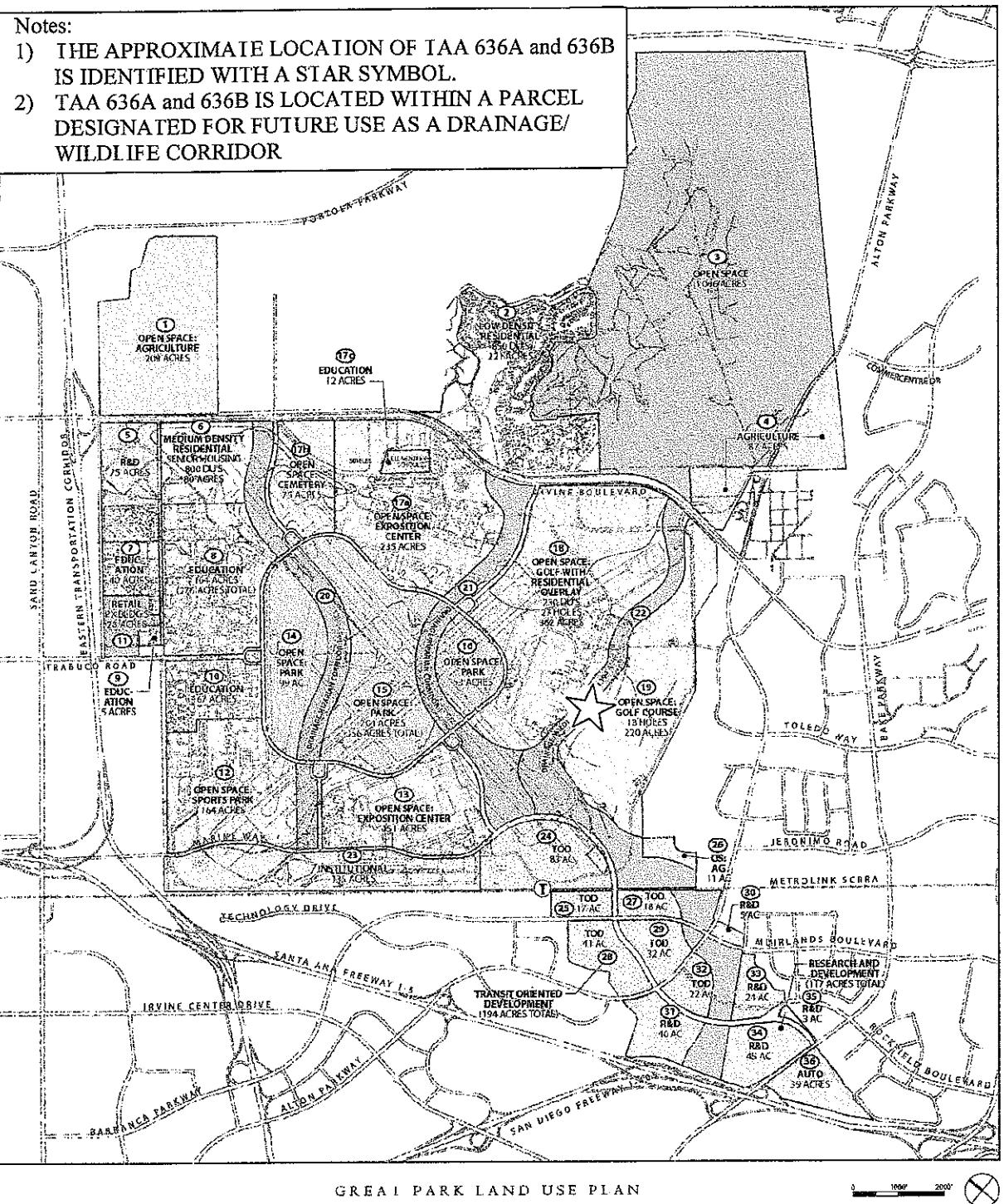
PRG - Preliminary remediation goal.

**APPENDIX A**  
**GREAT PARK LAND USE PLAN**

---

**Notes:**

- 1) THE APPROXIMATE LOCATION OF TAA 636A and 636B IS IDENTIFIED WITH A STAR SYMBOL.
  - 2) TAA 636A and 636B IS LOCATED WITHIN A PARCEL DESIGNATED FOR FUTURE USE AS A DRAINAGE/WILDLIFE CORRIDOR



## The Orange County Great Park

*Prepared for the City of Irvine by ROMA Design Group and Associated Consultants*

JUN 12 200

**APPENDIX A**  
**FORMER TEMPORARY ACCUMULATION AREA (TAA) 636A and 636B**  
**CITY OF IRVINE REUSE PARCEL LOCATIONS**

**APPENDIX B**  
**JEG RFA BACKGROUND INFORMATION**

**MARINE CORPS AIR STATION EL TORO  
EL TORO, CALIFORNIA  
INSTALLATION RESTORATION PROGRAM  
FINAL RESOURCE CONSERVATION  
AND RECOVERY ACT (RCRA)  
FACILITY ASSESSMENT REPORT**

**VOLUME I**

**16 July 1993**

**PREPARED BY:**  
Southwest Division, Naval Facilities  
Engineering Command  
1220 Pacific Highway  
San Diego, California 92132-5190

**THROUGH:**  
**CONTRACT #N68711-89-D-9296**

**CTO #193**

**DOCUMENT CONTROL NO:**  
**CLE-C01-01F193-S2-0001**

**WITH:**

Jacobs Engineering Group Inc.  
3655 Nobel Drive, Suite 200  
San Diego, California 92122

**In association with:**  
International Technology Corporation  
**CH2M HILL**

**Evaluation Form  
SWMU/Area of Concern  
Number 160**

Name: Hazardous Waste Storage Area

Location: South of Building 636

Size: 176 sq ft

Date of Site Visit: 01 May 1991



Period of Operation

Currently active

**Evaluation Form  
SWMU/Area of Concern  
Number 160**

**Unit Characteristics**

A HWSA is located approximately 65 ft southeast of Building 636. The HWSA consists of a sandbag berm encompassing an 11-ft x 16-ft area. The berm is 1 to 2 ft in height. A canvas sheet is draped over the berm and provides the lining for the HWSA. The HWSA is located on an unpaved, unprotected soil area. The canvas is darkly stained within the bermed area. A tear in the canvas liner was observed near the southeastern corner within the HWSA. Drums within the HWSA are stored on metal pallets. The HWSA is bordered on all sides by grassy or bare soil areas. No stains on the unpaved areas in proximity to the HWSA were visually observed.

Two 55-gallon drums were located outside of the bermed area on unpaved ground. One drum contained solids, the other drum was empty. Two metal storage lockers for storage of flammable materials were located to the north and south of the HWSA. The contents of these lockers is unknown.

**Waste Characteristics**

Waste oil  
Absorbent with waste fuel and oil

**Possible Migration Pathways**

Soil

**Evidence of Release**

Stains on the canvas liner of the HWSA

**Exposure Potential**

On-Station personnel

**Recommendations**

Since this HWSA is located on unpaved soil covered by a liner, which is stained and has a torn section, it is likely that soil may have been impacted by spills. This HWSA is recommended for a sampling visit.

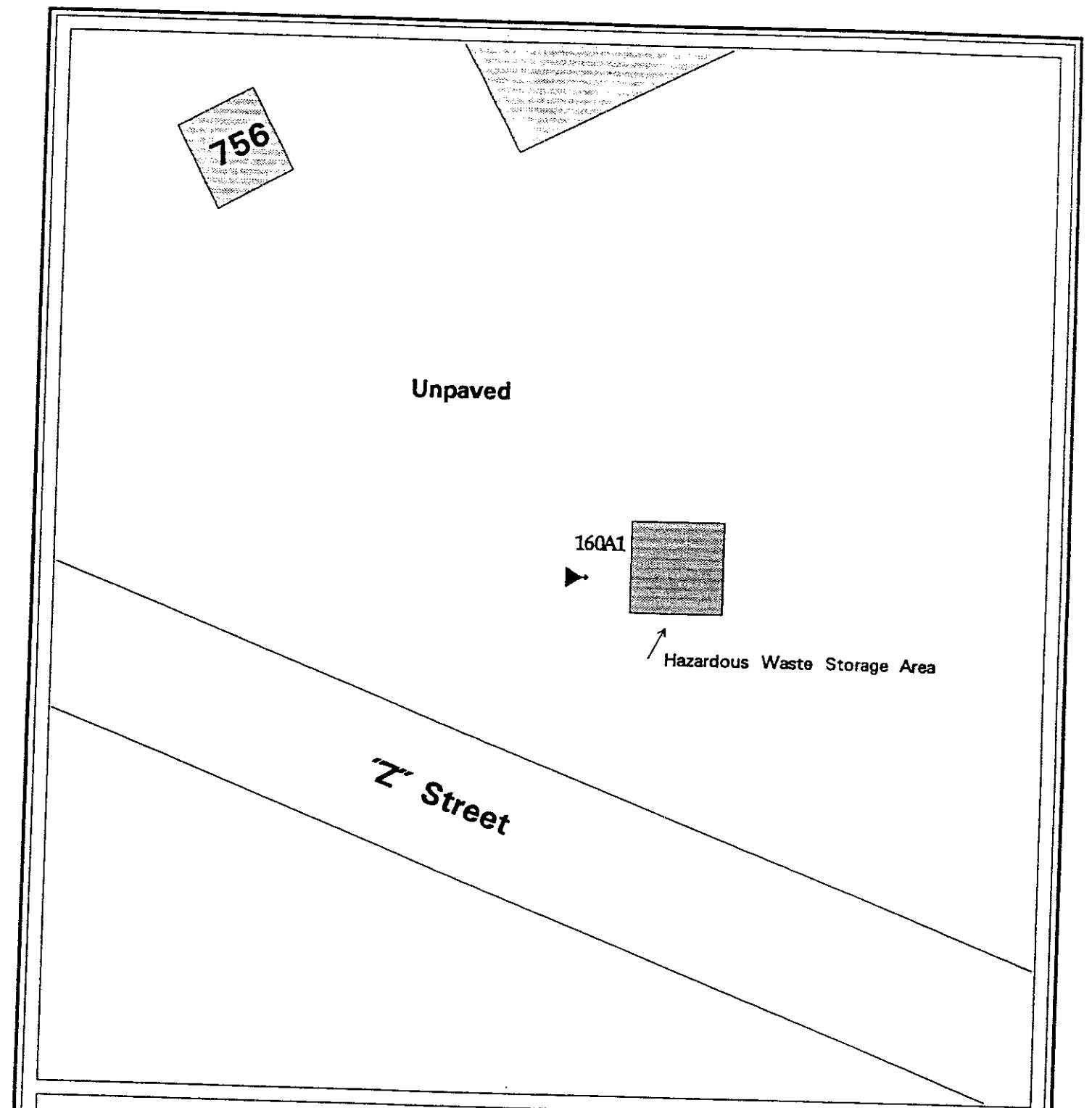


Figure 49 Sample Location Map

Boring Location and Number:

⊕ 123H4 5' Deep Boring

⊕ 123B4 25' Deep Boring

▲ 123A4 60' Long, Angle Boring

Features:

Building

Concrete

Fence

Railroad

SWMU/AOC Number and Type:

160 - Hazardous Waste Storage Area

Scale

0 10 20

40 Feet

MCAS El Toro  
RCRA Facility Assessment



PROJECT NUMBER LA070022.S0.10	BORING NUMBER 160A-1
SOIL BORING LOG	

PROJECT NAVY CLEAN RCRA FACILITY ASSESSMENT

LOCATION MCAS-EL TORO

ELEVATION

DRILLING CONTRACTOR BEYLIK DRILLING, INC., LA HABRA, CALIFORNIA

DRILLING METHOD AND EQUIPMENT HSA, 3-1/4 ID, 6-1/2 OD, INGERSOL-RAND TH-10

WATER LEVELS START 10/15/92 FINISH 10/15/92 LOGGER A. GIMURTU

DEPTH BELOW SURFACE (FT)	SAMPLE		STANDARD PENETRATION TEST RESULTS 6' - 6" - 6" (N)	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER			
5.0				Surficial material consisting of 1 inch mostly dead sod	Begin drilling at 13:00
10.0					Driller notes balled soil in borehole.
12.0	1-MC	1.5	17-18-18-20	SANDY SILT (ML), brown moist, very stiff fine grained sand distinctive remnant soil structure	Sample headspace 0 ppm with OVA and HNu at 10 0 feet
20.0					Difficult drilling from 18 0 to 22 0 feet
22.0	2-MC	14	8-16-22-18	21.5-22 WELL GRADED SAND (SW), light brown to gray, moist medium dense trace shell fragments	Sample headspace 0 ppm with OVA and HNu at 20 0 feet
24.0	2A-MC	2.0	7-13-12-20	Similar to 2-MC	
32.0					
34.0	3-MC	18	18-24-30-30	Similar to 2A-MC dense no shell fragments	Sample headspace 0 ppm with OVA and HNu at 32 0 feet



PROJECT NUMBER LA070022 SO 10	BORING NUMBER 160A-1
SHEET 2 OF 2	
SOIL BORING LOG	

PROJECT NAVY CLEAN RCRA FACILITY ASSESSMENT LOCATION MCAS-EL TORO  
ELEVATION \_\_\_\_\_ DRILLING CONTRACTOR BEYLIK DRILLING, INC., LA HABRA, CALIFORNIA  
DRILLING METHOD AND EQUIPMENT HSA, 3-1/4 ID, 6-1/2 OD, INGERSOL-RAND TH-10  
WATER LEVELS \_\_\_\_\_ START 10/15/92 FINISH 10/15/92 LOGGER A. GIMURTU

DEPTH BELOW SURFACE (FT)	SAMPLE		STANDARD PENETRATION TEST RESULTS 6' - 6' - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY SOIL STRUCTURE MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER			
400	40.0				
42.0	4-MC	0			
44.0	4A-MC	2 0	19-25-30-40	42-43 POORLY GRADED SAND (SP) moist medium dense, coarse grained. 43-44 CLAYEY SILT (ML/CL) moist hard, micaceous	Sample headspace 0 ppm with OVA and HNu at 44.0 feet  Interbedded 1 to 6 layers of sands and silts as described in 4A-MC.
50.0					
52.0	5-MC	2.0	7-20-30-45		Sample headspace 0 ppm at 52.0 feet with OVA
55.0					
59.0					
60.0					
61.0	6-MC	2.0	37-90-110	Similar to 5-MC	Driller notes silty, clayey soil at 59.0 feet while augering Sample headspace 0 ppm with OVA at 61.0 feet.
65.0					Sampler refusal at 61.0 feet

MCAS EL TORO RCRA FACILITY ASSESSMENT - SAMPLING VISIT RESULTS												
ANALYTICAL TEST RESULTS												
SWMMU/AOC NUMBER	TYPE (FIGURE)	BORING NUMBER	SAMPLE		VOCs ( $\mu\text{g}/\text{kg}$ )	SVOCs ( $\mu\text{g}/\text{kg}$ )	PESTICIDES/PCBs ( $\mu\text{g}/\text{kg}$ )	METALS ( $\text{mg}/\text{kg}$ )	RECOMMENDATIONS			
			DEPTH (FEET)	TPH ( $\text{mg}/\text{kg}$ )					Action	Rationale		
160	Hazardous Waste Storage Area (49)	A1	10	ND	ND	ND	ND	ND	ND	ND	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCBs < CRDL Metals < BGT
			20	ND	ND	ND	Methylene Chloride-5 J *	Acetone-8 BJ *	Di-n-butylphthalate-2200 Bis[2-Ethyhexyl]phthalate-450 B * Butylbenzylphthalate-2600	ND	NAB	
			20	ND	ND	ND	Methylene Chloride-3 J *		Di-n-butylphthalate-2600 Bis[2-Ethyhexyl]phthalate-370 B * Butylbenzylphthalate-2600	ND	NAB	
			30	ND	ND	ND	Methylene Chloride-3 J *	Acetone-4 BJ *	Bis[2-Ethyhexyl]phthalate-480 B *	ND	NAB	
			40	ND	ND	ND	Methylene Chloride-4 BJ *	Acetone-3 BJ *	Di-n-butylphthalate-5500 Bis[2-Ethyhexyl]phthalate-350 B *	ND	NAB	
			50	ND	ND	ND	Methylene Chloride-3 BJ *	Acetone-2 BJ *	Di-n-butylphthalate-3500 Bis[2-Ethyhexyl]phthalate-2200	ND	NAB	
			60	ND	ND	ND	Methylene Chloride-4 BJ *	Acetone-3 BJ *	Di-n-butylphthalate-2200 Bis[2-Ethyhexyl]phthalate-380 B * Butylbenzylphthalate-860	ND	NAB	

**Table 6-15**  
**Recommendations for SWMUs/AOCs**

<b>MCAS El Toro RFA</b>					
<b>SWMU No.</b>	<b>SWMU/AOC Type</b>	<b>Recommendation (F/A/NFA)</b>	<b>Description of Further Action</b>	<b>Rationale for Further Action</b>	
160	Hazardous Waste Storage Area	NFA	—	—	—
162	Underground Storage Tank	NFA	—	—	—
164	Vehicle Wash Rack	NFA	—	—	—
171	Hazardous Waste Storage Area	F/A	Shallow soil borings	Potential for SVOCs in surface soil	
172	Hazardous Waste Storage Area	NFA	—	—	—
173	Oil/Water Separator	F/A	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent	—
175	Oil/Water Separator	F/A	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent	—
176	Underground Storage Tank	F/A	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent	—
179	Oil/Water Separator	NFA	—	—	—
181	Landfarming Area	NFA	—	—	—
186	Hazardous Waste Storage Area	NFA	—	—	—
187	Underground Storage Tank	NFA	—	—	—
188	Underground Storage Tank	NFA	—	—	—
183	Oil/Water Separator	NFA	—	—	—
194	Former Incinerator Site	F/A	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent	—
195	Vehicle Wash Rack	NFA	—	—	—
196	Oil/Water Separator	NFA	—	—	—
198	Vehicle Wash Rack	F/A	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons	—
199	Oil/Water Separator	F/A	Leak test/ inspection of separator	Moderate petroleum hydrocarbon contamination at 15-foot dept	—
201	Vehicle Wash Rack	F/A	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons	—
202	Underground Storage Tank	NFA	—	—	—
204	Vehicle Wash Rack	F/A	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons	—
205	Oil/Water Separator	NFA	—	—	—
208	Oil/Water Separator	NFA	—	—	—
211	Oil/Water Separator	NFA	—	—	—
213	Vehicle Wash Rack	F/A	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons	—
214	Underground Storage Tank	NFA	—	—	—
220	Oil/Water Separator	NFA	—	—	—
222	Hazardous Waste Storage Area	NFA	—	—	—
223	Hazardous Waste Storage Area	NFA	—	—	—

7/15/93 9:50 AM

SWMUREC.XLS

**APPENDIX C**  
**BNI VSI EVALUATION REPORT**

Southwest Division  
Naval Facilities Engineering Command  
Contracts Department  
1220 Pacific Highway, Room 135  
San Diego, CA 92132-5187

Contract No. N68711-92-D-4670

**COMPREHENSIVE LONG-TERM ENVIRONMENTAL  
ACTION NAVY**

**CLEAN II**

**FINAL ADDENDUM TO THE  
RCRA FACILITY ASSESSMENT  
MCAS EL TORO, CALIFORNIA  
(VOLUME 6 OF THE FINAL RFA REPORT)**

**CTO-0065/0170**

**May 1996**

Prepared by:

BECHTEL NATIONAL, INC.  
401 West A Street, Suite 1000  
San Diego, CA 92101



Signature:

A handwritten signature in black ink, appearing to read "Jacques Lord".

Jacques Lord, CTO Leader

Date: 31 May 1996

## ACCUMULATION AREA EVALUATION CHECKLIST

(CIRCLE AS APPROPRIATE AND FILL IN COMPLETELY)

JOB 22214

CTO-0065

NAVY CLEAN II

MCAS EL TORO RFA CONFIRMATION ACTIVITIES

### GENERAL DESCRIPTION:

SWMU #: 160      Accumulation Area (AA) #: 636

Location (bldg): HWSA/Bldg. 636

Site Contact: Leta Suarez      Ext: 2772

Permission for Access?  Y  N If yes, explain:

Type of Wastes Observed      None

### TYPE: (CIRCLE AS APPROPRIATE)

Locker	Cabinet	Pad	Concrete/Soil/Asphalt	floor
<input type="checkbox"/> Berm	<input type="checkbox"/> Fence	<input type="checkbox"/> Fence Type:	<input type="checkbox"/> Indoor	
<input type="checkbox"/> Pallets	<input type="checkbox"/> Drum(s)	No. of Drums: 8	<input type="checkbox"/> Outdoor	
1 avepack				

### CONDITION:

Stain(s)      Odor(s)      Crack(s)

Placards/Labels:  Y  N If Yes, list:  
Antifreeze  
Rags with corrosion preventive  
Paint  
Desiccant  
Hazwaste Area #9

Observations: Clean concrete pad

Status: Active area, no significant change as of 11-10-95.

### DIMENSIONS: (ESTIMATED SIZE OR AREA IN FT)

AA/SWMU: 10x10 ft.

"Stain(s)" : None.

Any Restrictions To Access?: None.

### EVALUATION OF REMOVAL/DECONTAMINATION STRATEGY (CIRCLE AS APPROPRIATE)

- |     |  |  |
|-----|--|--|
| Yes | <input checked="" type="checkbox"/> No | Potential for release evident based on this surveillance     |
| Yes | <input type="checkbox"/> No            | Potential for simple removal                                 |
| Yes | <input checked="" type="checkbox"/> No | Potential for decontamination activities prior to removal    |
| Yes | <input checked="" type="checkbox"/> No | Potential for sampling (describe: )                          |
| Yes | No                                     | Potential for removal after additional assessment activities |

### SKETCH: (MAKE A SKETCH OR ATTACH PHOTO(S) OF RELEVANT ACCESS, OBJECTS, WORK SPACE, ETC., AS APPROPRIATE, ON REVERSE OF THIS FORM)

DATE/TIME OF SURVEILLANCE: 12-5-94/15:25

UPDATED: 11-10-95/13:40

SURVEILLANCE PERFORMED BY: Larry Bauman

**PHOTO LOG**

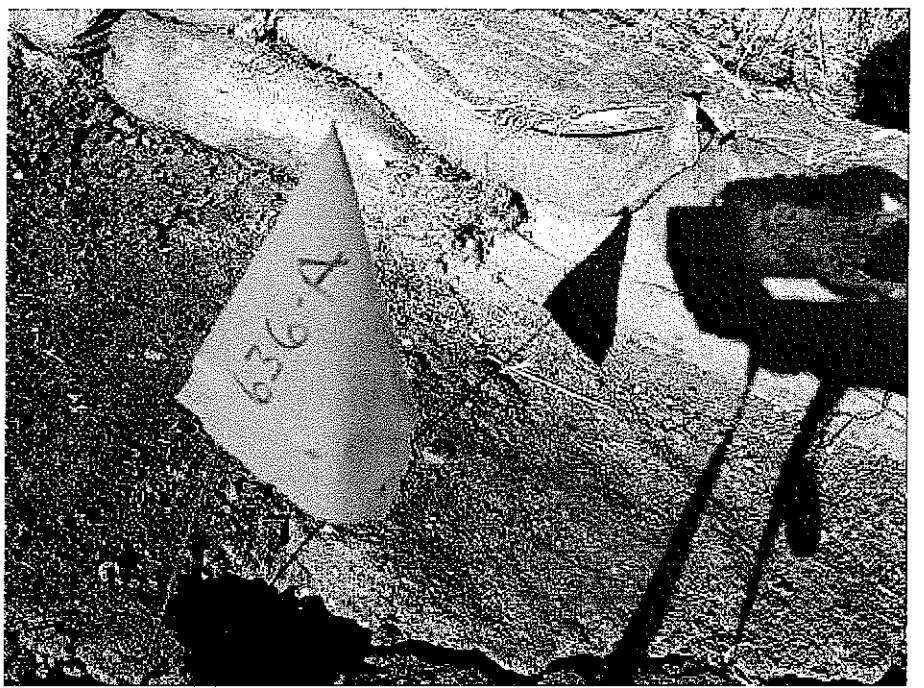


**SWMU #: 160**

**PHOTO DATE: 12-14-94**

## **APPENDIX D**

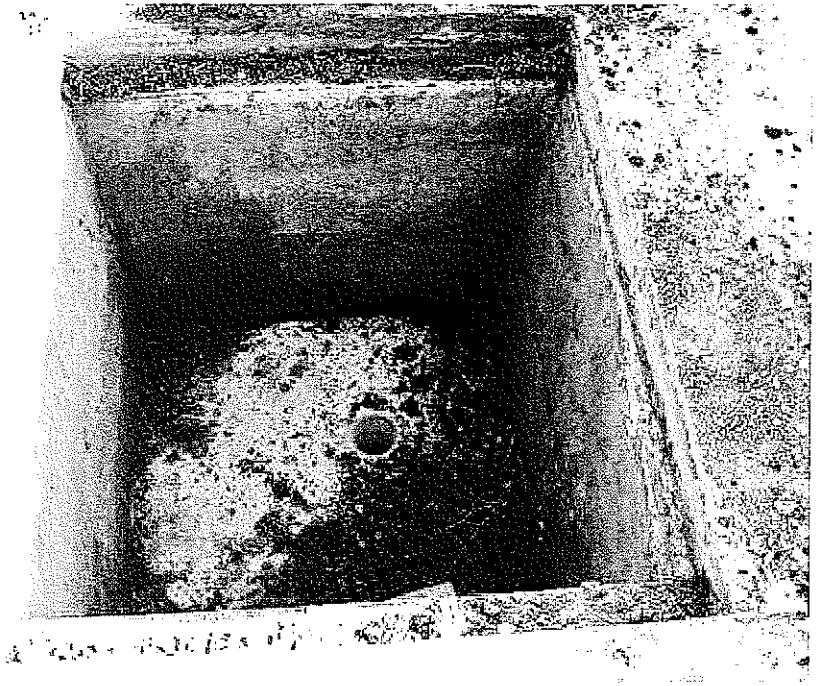
### **PHOTO LOG**



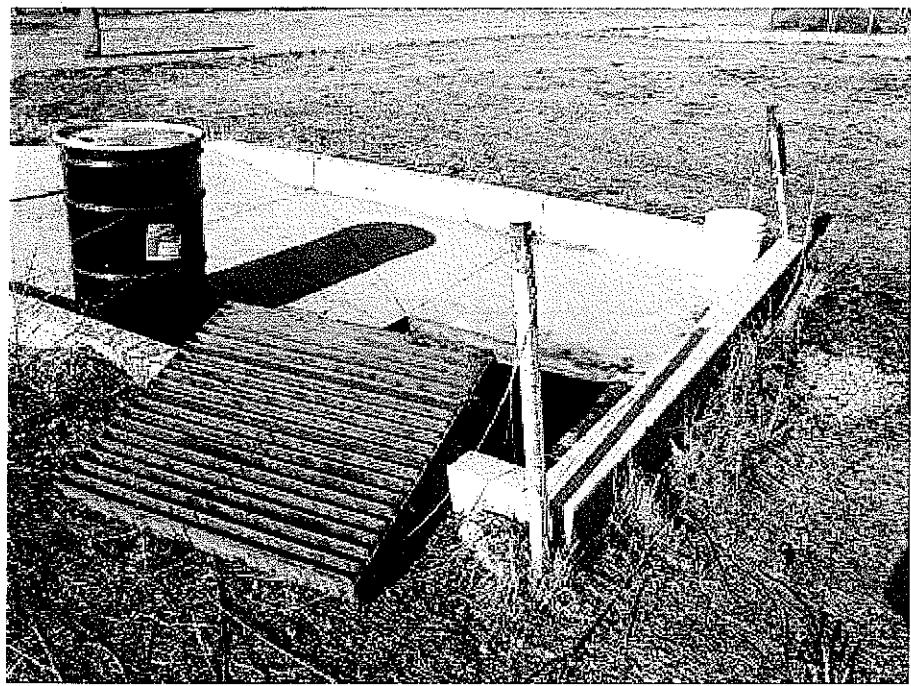
TAA 636A, soil sample location 636A-SBA



TAA 636A, sandbag berm, with canvas cover removed for inspection of soil.



TAA 636B, sample collected from sump floor.



View of TAA 636B.

**APPENDIX E**  
**1997 SITE ASSESSMENT LOG**

## **SITE ASSESSMENT LOG**

MCAS EL TORO

TEMPORARY ACCUMULATION AREA & RFA SITE

18609, D.O. 70

TAA SITE: 1636 RFA SITE: \_\_\_\_\_ SWMU NO. 160

Field Observations by: Yvette Williams Date: 4/18/97

TAA area: Paved or Unpaved

OK

Paved: Concrete or Asphalt, Condition of the Concrete/Asphalt: Minor Cracks, Stains, etc.

Unpaved: Open on the Ground or Inside the Building

Is there any Drums or any types of Waste Stored: Yes/No If Yes, Describe: restricted

area with small steel holding container located adjacent to site. Box has orange triangle with a slash inside

Fenced: Yes/No, Sump: Yes/No, Concrete Berms: Yes/No, 10 inch, Roof: Yes/No

Describe other Structural details: Building appears to have roof at one time

TAA Decontamination and/or Demolition Possible: Yes/No inactive

Site Setup Constraints: Equipment Operation, movement of Excavator or Backhoe Note

Nearest Building or Structure Distance: Building 1636 located approx 50' N

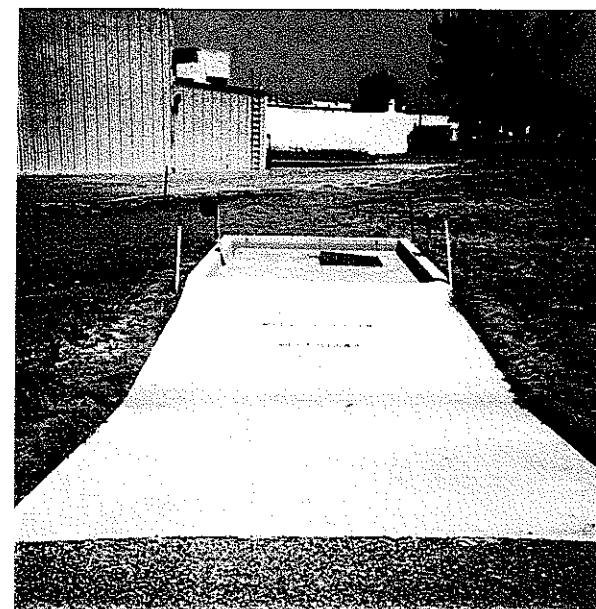
Any Underground Piping/Lines, or Transformer Observed: No

Overhead Utility Lines/Poles: No

Photograph Roll No. \_\_\_\_\_ Please attach all the Photographs to this sheet.

Draw Sketch:

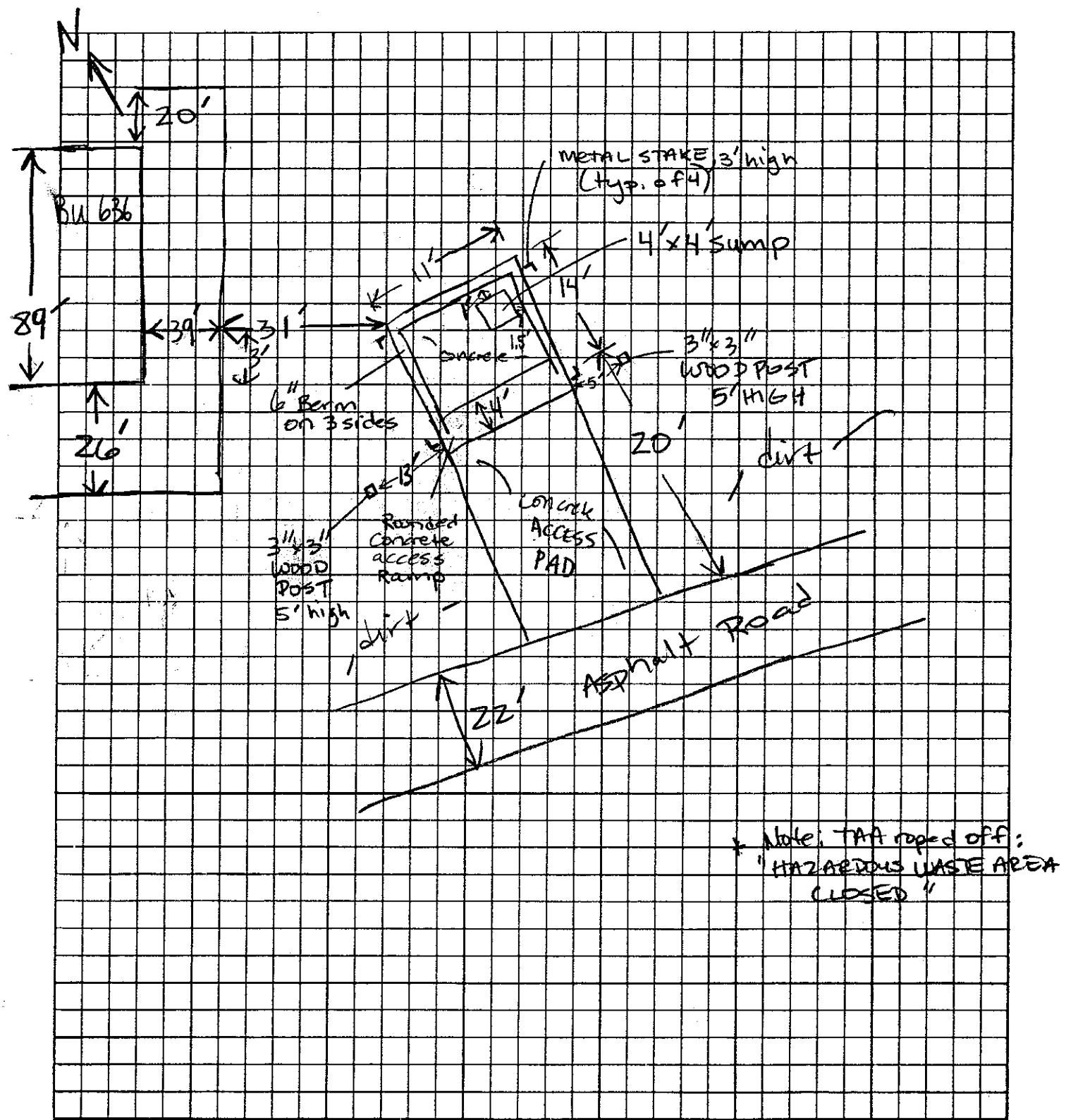
see attached photo



TAA-636

4/18/97

TAA 636



## **APPENDIX F LAND SURVEY DATA**

2188200

6113800

# MCAS, EL TORO

TAA 636-1 & 636-2 CT0-24

2188150

343.62FS

2188100

Z Street

2188050

344.86FS

PREPARED FOR:

IT CORPORATION

3347 MICHELSON DR., SUITE 200  
IRVINE, CA 92612-1692  
(949) 660-7594

6113850

6113900

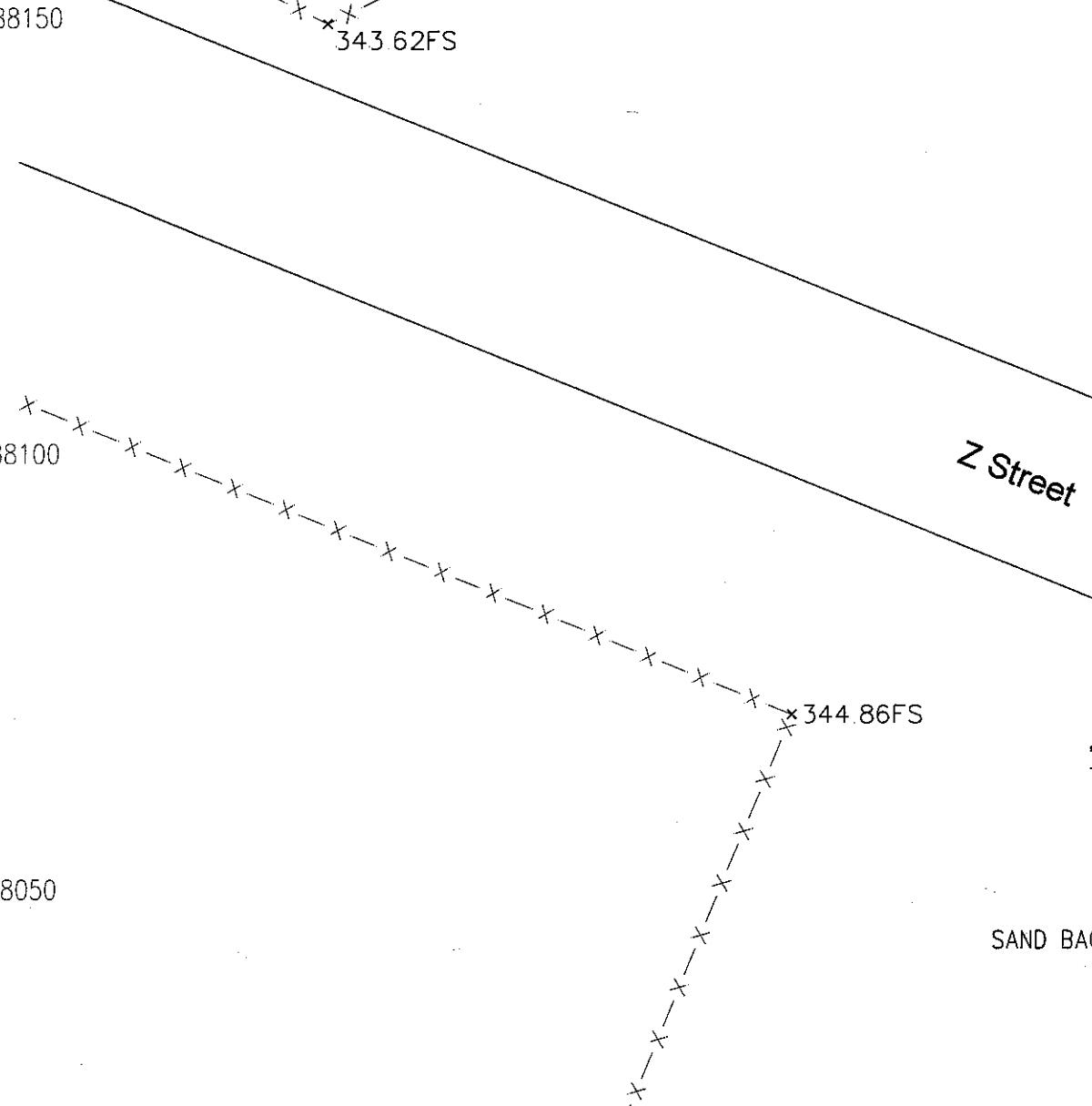
6113950

6114000

6114050

## SAMPLE COORDINATE LISTING

NORTHING	EASTING	FS	DESCRIPTION
2188127 18	6113908.72	342.90	TAA 636-2 SBA
2188057.02	6113898.16	345.82	TAA 636-1 SBB
2188052 96	6113898.69	345.84	TAA 636-1 SBA



Graphic Scale  
 20      0      10      20  
 ( In Feet )  
 1 inch = 20 ft.

## LEGEND

- SAMPLE POINTS
- NG NATURAL GRADE
- FS FINISH SURFACE
- FL FLOW LINE
- FH FIRE HYDRANT
- WOOD FENCE

DATE OF SURVEY: 10-03-2002

**CAL VADA****SURVEYING, INC.**

108 Business Center Dr. Corona, Ca 92880-1782  
PHONE: (909) 280-9960 FAX: (909) 280-9746

2188000

JOB NO. 97102-TAA636-1 &amp; TAA636-2

EDWARD L. SCHENKET  
L.S. 4240  
LICENSED LAND SURVEYOR  
STATE OF CALIFORNIA  
Exp. 6-30-04  
Signature

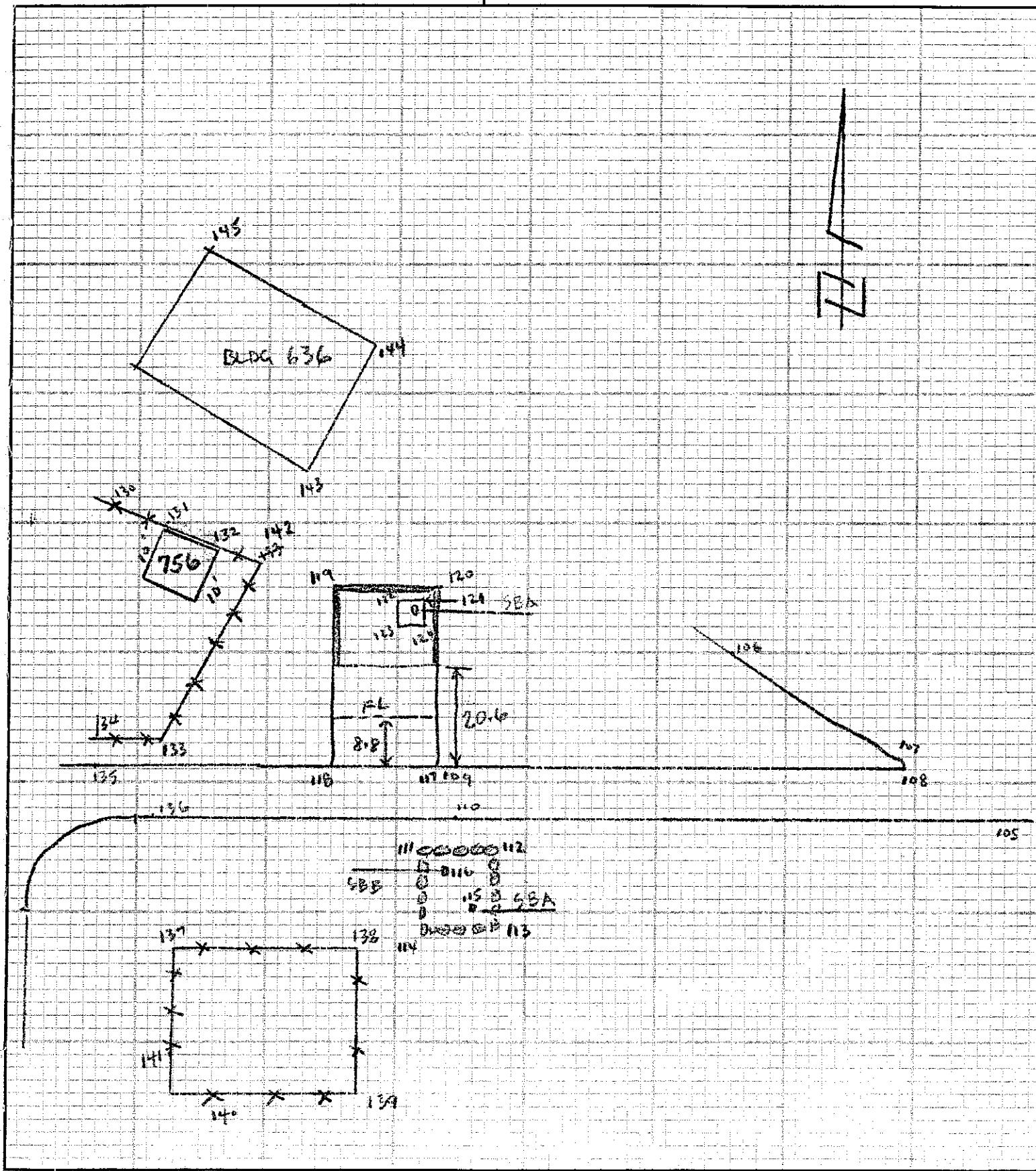
# **CAL VADA SURVEYING, INC.**

Title:

TAA 636-1 & TAA 636-2

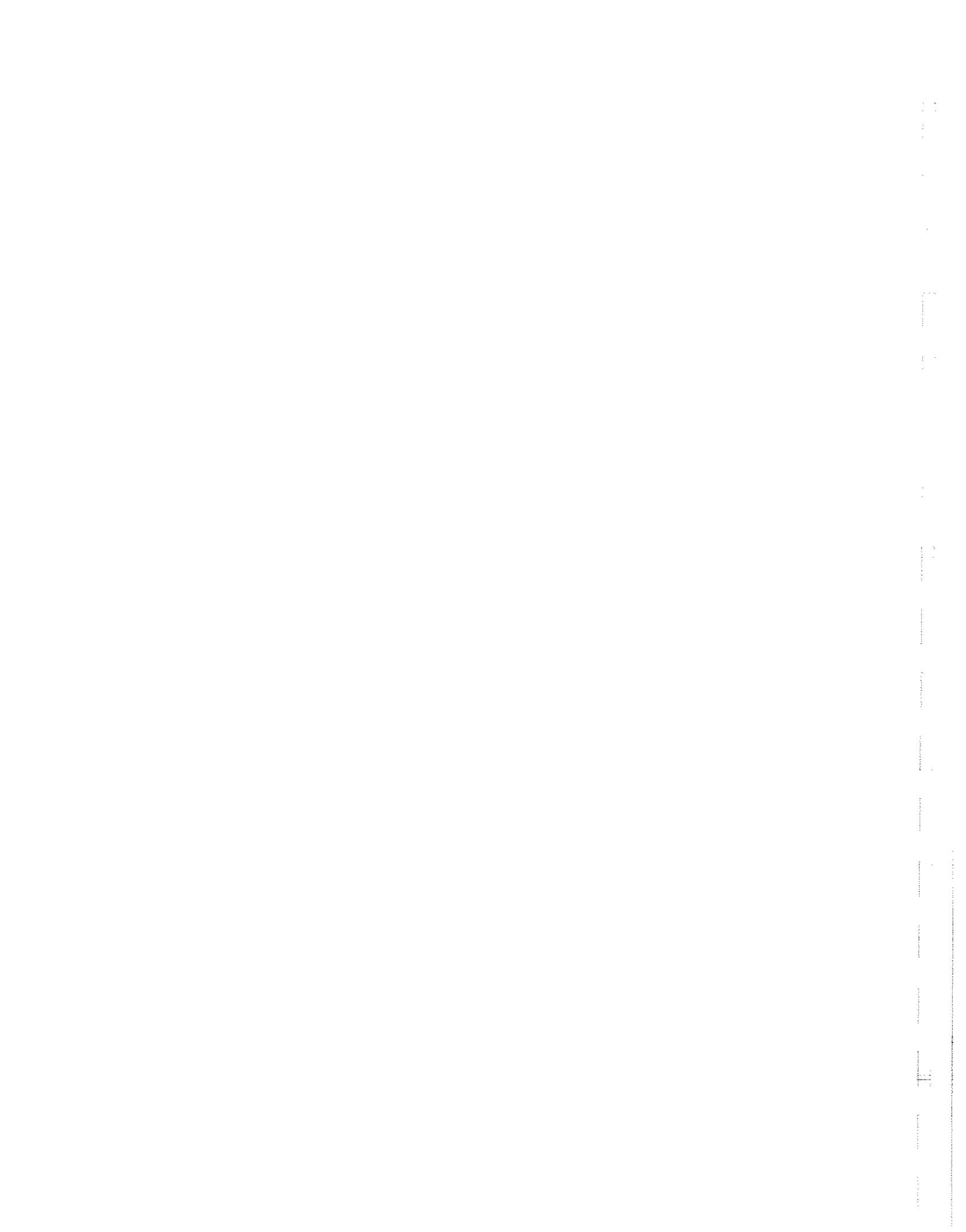
Prepared by: ATANASIO - JAVIER

Date: OCT. 3, 2002 Job Number: 97102



## **APPENDIX G**

### **LABORATORY ANALYTICAL REPORT**



**the big group**  
IT Corporation  
2790 Masside Blvd.  
Monroeville, PA 15146-2792  
(412)372-7701

### CHAIN-OF-CUSTODY RECORD

PROJECT DATA MANAGER'S COPY

A 14639

Q3 - J146

FORM 10019 REV. 9-99

### Project Information Section

For Project Personnel Only  
Do Not Submit to Laboratory

IT'S LAB COORDINATOR <b>LYNN YERGER, R.S.N.</b>	LAB COORDINATOR'S PHONE 7471-660-7537	LAB COORDINATOR'S FAX 941-475-5433	LABORATORY SERVICE ID ENIX	LABORATORY CONTACT HORN, M.	LABORATORY PHONE 301-618-8887	LABORATORY FAX 301-618-8887	RECEIVED BY <i>J. Horn</i>	DATE 11/19/02	TIME 11:42 AM	RELEASER PARK, D.	COOLER TEMPERATURE UPON RECEIPT: S
PROJECT LOCATION EL TIBO	PROJECT NUMBER 818655-133091	PROJECT FAX 949-475-5433	LABORATORY ADDRESS 1635 W. 20TH ST	CITY, STATE AND ZIP CODE VERMONT, CA 90511	RECEIVED BY PARK, D.	COOLER TEMPERATURE UPON RECEIPT: S	Comments	Comments			
PROJECT CONTACT <b>LYNN YERGER, R.S.N.</b>	CITY, STATE AND ZIP CODE 949-475-5433	CLIENT SANTA ANA, CA	PROJECT MANAGER'S FAX 941-474-8309	PROJECT MANAGER'S FAX 941-474-8309	RECEIVED BY PARK, D.	COOLER TEMPERATURE UPON RECEIPT: S	Comments	Comments			
PROJECT ADDRESS MCAS EL TIBO	PROJECT MANAGER'S PHONE 941-660-7576	PROJECT MANAGER'S FAX 941-474-8309	RECEIVED BY PARK, D.	COOLER TEMPERATURE UPON RECEIPT: S	RECEIVED BY PARK, D.	COOLER TEMPERATURE UPON RECEIPT: S	Comments	Comments			
PROJECT MANAGER DARIAH TY RIVAIL	PROJECT MANAGER'S PHONE 941-660-7576	PROJECT MANAGER'S FAX 941-474-8309	RECEIVED BY PARK, D.	COOLER TEMPERATURE UPON RECEIPT: S	RECEIVED BY PARK, D.	COOLER TEMPERATURE UPON RECEIPT: S	Comments	Comments			
SAMPLES COLLECTED BY: D. PARKES RELINQUISHED BY: PARK, D.											
RELEASER PARK, D.											
DATE 11/19/02											
TIME 11:42 AM											
SAMPLER'S CONDITIONS UPON RECEIPT: S											
Comments											

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Manilla - Project Data Manager

Sample Type: G - Grab, C - Composite, F - Field Sample,  
QC - Quality Control Sample

Due: 9/26/02

Sample Point Location			G	C	F	QC
1) TRS BLANK			X	X		X
2) 636-A1 Q 18"			X			X
3) 636-A2 Q 34"			X			X
4) 636-B1 Q 18"			X			X
5) 636-B2 Q 34"			X			X
6) 636-C1 Q 18"			X			X
7) 636-B-SUM 2 C 34"			X			X
8) 636-B-SUM 2 C 34"			X			X
9) 636-B-SUM 2 C 34"			X			X
10) 955-DRM			X			X

Sample Type			G	C	F	QC
1) TRS BLANK			X	X		X
2) 636-A1 Q 18"			X			X
3) 636-A2 Q 34"			X			X
4) 636-B1 Q 18"			X			X
5) 636-B2 Q 34"			X			X
6) 636-C1 Q 18"			X			X
7) 636-B-SUM 2 C 34"			X			X
8) 636-B-SUM 2 C 34"			X			X
9) 636-B-SUM 2 C 34"			X			X
10) 955-DRM			X			X

**the i group** *IT Corporation*  
2790 Rossdale Blvd.  
(412)372-7701

### CHAIN-OF-CUSTODY RECORD

PROJECT DATA MANAGERS COPY

**A 14640**

Project Information Section  
For Project Personnel Only  
Do Not Submit to Laboratory

FORM 0019 REV. 9-99

IT'S LAB COORDINATOR	LAB COORDINATOR'S PHONE	LAB COORDINATOR'S FAX	LAB COORDINATOR'S NAME	LABORATORY SERVICE ID	LABORATORY CONTACT	LABORATORY PHONE	LABORATORY FAX	MAIL REPORT (COMPANY NAME)			
Lynn Jeffersan	949-660-7537	949-475-5433	EFAW	Y6 min		110-478-8833		SHAY E & I			
PROJECT NAME	PROJECT LOCATION	PROJECT NUMBER						RECIPIENT NAME			
El Tard	El Tard, CA	818655						DIAZ			
PROJECT CONTACT	PROJECT PHONE NUMBER	PROJECT FAX	LABORATORY ADDRESS	CITY, STATE AND ZIP CODE	CITY, STATE AND ZIP CODE	ADDRESS	CITY, STATE AND ZIP CODE	SHIP TO			
Lynn Jeffersan	949-660-7537	949-475-5433	1835 N 34th ST	97501	1835 N 34th ST	3337 MICHELEN DR.	97501	SANTE FE			
PROJECT ADDRESS	CITY, STATE AND ZIP CODE	CLIENT	PROJECT MANAGER'S NAME	PROJECT MANAGER'S PHONE	PROJECT MANAGER'S FAX						
El Tard	SANTA ANA, CA	EFA WESI		949-474-8309							
PROJECT MANAGER	PROJECT MANAGER'S PHONE	PROJECT MANAGER'S FAX									
Maryann Ryall	949-660-7576										
					Comments						
Sample Identifier	Sample Date	Processor Date	Processor #	Processor Name	Comments	Sample Point Location	G	C	F	QC	
1 818655-83100	5/19/19	1345 N/A	5	3 5days	X X X X X X X X X X	1) 985-A1 @ 18°	X	X	X	X	
2 818655-83101	↓	↓	HCI	↓	X X X X X X X X X X	2) AA10	X	X	X	X	
3 818655-83102	8/2/19	1400 HNO3	9 ↓	↓	X X X X X X X X X X	3) 985-A2 @ 36°	X	X	X	X	
4	8/2/19	1440	↓	↓	X X X X X X X X X X	4) TA10					
5						5) EA10					
6						6) EA10					
7						7) EA10					
8						8) EA10					
9						9) EA10					
10						10) EA10					
SAMPLES COLLECTED BY:	COURIER AND AIR BILL NUMBER: GARY LAWRENCE					COOLER TEMPERATURE UPON RECEIPT:					
RELINQUISHED BY:						DATE:					
Pete Ziemer						TIME:					

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Manilla - Project Data Manager

Sample Type: G - Grab, C - Composite, F - Field Sample  
QC - Quality Control Sample

SW 5030B/8260B  
VOLATILE ORGANICS BY GC/MS

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
Batch No.   : 021146           Date Extracted: 09/22/02 02:39
Sample ID: 818655-B3090       Date Analyzed: 09/22/02 02:39
Lab Samp ID: I146-01         Dilution Factor: 1
Lab File ID: RIW675          Matrix      : WATER
Ext Btch ID: V006157         % Moisture  : NA
Calib. Ref.: RIW335          Instrument ID : T-006
=====
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYL VINYL ETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	2
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	2.5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE, TOTAL	ND	5	3
METHYLENE CHLORIDE	2.1J	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
1,2-DICHLOROETHANE-D4	91	86-118	
BROMOFLUOROBENZENE	88	86-115	
TOLUENE-D8	95	88-110	

2004

SW 5030B/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/22/02 03:17
 Sample ID: 818655-B3102 Date Analyzed: 09/22/02 03:17
 Lab Samp ID: I146-13 Dilution Factor: 1
 Lab File ID: RIW676 Matrix : WATER
 Ext Btch ID: V006157 % Moisture : NA
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYL VINYL ETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	2
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	2.5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE, TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2
<hr/>			
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
1,2-DICHLOROETHANE-D4	92	86-118	
BROMOFLUOROBENZENE	86	86-115	
TOLUENE-D8	96	88-110	

2005

SW 5035/82608  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 10:21
 Sample ID: 818655-B3091 Date Analyzed: 09/24/02 10:21
 Lab Samp ID: I146-02 Dilution Factor: .94
 Lab File ID: RIW759 Matrix : SOIL
 Ext Btch ID: V006I64 % Moisture : 8.5
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.1	2.1
1,1,2,2-TETRACHLOROETHANE	ND	5.1	2.1
1,1,2-TRICHLOROETHANE	ND	5.1	2.1
1,1-DICHLOROETHANE	ND	5.1	2.1
1,1-DICHLOROETHENE	ND	5.1	2.1
1,2-DICHLOROETHANE	ND	5.1	2.1
1,2-DICHLOROPROPANE	ND	5.1	2.1
2-BUTANONE (MEK)	ND	51	5.1
2-HEXANONE	ND	51	5.1
2-CHLOROETHYL VINYL ETHER	ND	51	2.1
4-METHYL-2-PENTANONE (MIBK)	ND	51	5.1
ACETONE	21J	51	5.1
BENZENE	ND	5.1	2.1
BROMODICHLOROMETHANE	ND	5.1	2.1
BROMOFORM	ND	5.1	2.1
BROMOMETHANE	ND	5.1	3.1
CARBON DISULFIDE	ND	5.1	2.1
CARBON TETRACHLORIDE	ND	5.1	2.1
CHLOROBENZENE	ND	5.1	2.1
CHLOROETHANE	ND	5.1	3.1
CHLOROFORM	ND	5.1	2.1
CHLOROMETHANE	ND	5.1	5.1
CIS-1,2-DICHLOROETHENE	ND	5.1	2.1
CIS-1,3-DICHLOROPROPENE	ND	5.1	2.1
DIBROMOCHLOROMETHANE	ND	5.1	2.1
ETHYLBENZENE	ND	5.1	2.1
XYLENE, TOTAL	ND	5.1	3.1
METHYLENE CHLORIDE	ND	5.1	2.1
MTBE	ND	10	2.1
STYRENE	ND	5.1	2.1
TOLUENE	ND	5.1	2.1
TRANS-1,2-DICHLOROETHENE	ND	5.1	2.1
TRANS-1,3-DICHLOROPROPENE	ND	5.1	2.1
TRICHLOROETHENE	ND	5.1	2.1
TETRACHLOROETHENE	ND	5.1	2.1
VINYL ACETATE	ND	51	2.1
VINYL CHLORIDE	ND	5.1	2.1
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
1,2-DICHLOROETHANE-D4	104	80-120	
BROMOFLUOROBENZENE	92	74-121	
TOLUENE-D8	100	81-117	

Preservation Date: 09/20/02 15:00

2033

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 10:58
 Sample ID: 818655-B3092 Date Analyzed: 09/24/02 10:58
 Lab Samp ID: I146-03 Dilution Factor: .98
 Lab File ID: RIW760 Matrix : SOIL
 Ext Btch ID: V006164 % Moisture : 9.2
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.4	2.2
1,1,2,2-TETRACHLOROETHANE	ND	5.4	2.2
1,1,2-TRICHLOROETHANE	ND	5.4	2.2
1,1-DICHLOROETHANE	ND	5.4	2.2
1,1-DICHLOROETHENE	ND	5.4	2.2
1,2-DICHLOROETHANE	ND	5.4	2.2
1,2-DICHLOROPROPANE	ND	5.4	2.2
2-BUTANONE (MEK)	ND	54	5.4
2-HEXANONE	ND	54	5.4
2-CHLOROETHYL VINYL ETHER	ND	54	2.2
4-METHYL-2-PENTANONE (MIBK)	ND	54	5.4
ACETONE	ND	54	5.4
BENZENE	ND	5.4	2.2
BROMODICHLOROMETHANE	ND	5.4	2.2
BROMOFORM	ND	5.4	2.2
BROMOMETHANE	ND	5.4	3.2
CARBON DISULFIDE	ND	5.4	2.2
CARBON TETRACHLORIDE	ND	5.4	2.2
CHLOROBENZENE	ND	5.4	2.2
CHLOROETHANE	ND	5.4	3.2
CHLOROFORM	ND	5.4	2.2
CHLOROMETHANE	ND	5.4	5.4
CIS-1,2-DICHLOROETHENE	ND	5.4	2.2
CIS-1,3-DICHLOROPROPENE	ND	5.4	2.2
DIBROMOCHLOROMETHANE	ND	5.4	2.2
ETHYLBENZENE	ND	5.4	2.2
XYLENE, TOTAL	ND	5.4	3.2
METHYLENE CHLORIDE	ND	5.4	2.2
MTBE	ND	11	2.2
STYRENE	ND	5.4	2.2
TOLUENE	ND	5.4	2.2
TRANS-1,2-DICHLOROETHENE	ND	5.4	2.2
TRANS-1,3-DICHLOROPROPENE	ND	5.4	2.2
TRICHLOROETHENE	ND	5.4	2.2
TETRACHLOROETHENE	ND	5.4	2.2
VINYL ACETATE	ND	54	2.2
VINYL CHLORIDE	ND	5.4	2.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	104	80-120
BROMOFLUOROBENZENE	91	74-121
TOLUENE-D8	92	81-117

Preservation Date: 09/20/02 15:00

2034

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No.: 021146 Date Extracted: 09/24/02 11:34
 Sample ID: 818655-B3093 Date Analyzed: 09/24/02 11:34
 Lab Samp ID: 1146-04 Dilution Factor: 1.0
 Lab File ID: RIW761 Matrix : SOIL
 Ext Btch ID: V006164 % Moisture : 8.2
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.4	2.2
1,1,2,2-TETRACHLOROETHANE	ND	5.4	2.2
1,1,2-TRICHLOROETHANE	ND	5.4	2.2
1,1-DICHLOROETHANE	ND	5.4	2.2
1,1-DICHLOROETHENE	ND	5.4	2.2
1,2-DICHLOROETHANE	ND	5.4	2.2
1,2-DICHLOROPROPANE	ND	5.4	2.2
2-BUTANONE (MEK)	ND	54	5.4
2-HEXANONE	ND	54	5.4
2-CHLOROETHYL VINYLETHER	ND	54	2.2
4-METHYL-2-PENTANONE (MIBK)	ND	54	5.4
ACETONE	22J	54	5.4
BENZENE	ND	5.4	2.2
BROMODICHLOROMETHANE	ND	5.4	2.2
BROMOFORM	ND	5.4	2.2
BROMOMETHANE	ND	5.4	3.3
CARBON DISULFIDE	ND	5.4	2.2
CARBON TETRACHLORIDE	ND	5.4	2.2
CHLOROBENZENE	ND	5.4	2.2
CHLOROETHANE	ND	5.4	3.3
CHLOROFORM	ND	5.4	2.2
CHLOROMETHANE	ND	5.4	5.4
CIS-1,2-DICHLOROETHENE	ND	5.4	2.2
CIS-1,3-DICHLOROPROPENE	ND	5.4	2.2
DIBROMOCHLOROMETHANE	ND	5.4	2.2
ETHYLBENZENE	ND	5.4	2.2
XYLENE, TOTAL	ND	5.4	3.3
METHYLENE CHLORIDE	ND	5.4	2.2
MTBE	ND	11	2.2
STYRENE	ND	5.4	2.2
TOLUENE	ND	5.4	2.2
TRANS-1,2-DICHLOROETHENE	ND	5.4	2.2
TRANS-1,3-DICHLOROPROPENE	ND	5.4	2.2
TRICHLOROETHENE	ND	5.4	2.2
TETRACHLOROETHENE	ND	5.4	2.2
VINYL ACETATE	ND	54	2.2
VINYL CHLORIDE	ND	5.4	2.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	80-120
BROMOFLUOROBENZENE	100	74-121
TOLUENE-D8	99	81-117

Preservation Date: 09/20/02 15:00

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 02I146 Date Extracted: 09/24/02 12:12
 Sample ID: 818655-B3094 Date Analyzed: 09/24/02 12:12
 Lab Samp ID: I146-05 Dilution Factor: .96
 Lab File ID: RIW762 Matrix : SOIL
 Ext Btch ID: V006164 % Moisture : 6.2
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.1	2
1,1,2,2-TETRACHLOROETHANE	ND	5.1	2
1,1,2-TRICHLOROETHANE	ND	5.1	2
1,1-DICHLOROETHANE	ND	5.1	2
1,1-DICHLOROETHENE	ND	5.1	2
1,2-DICHLOROETHANE	ND	5.1	2
1,2-DICHLOROPROPANE	ND	5.1	2
2-BUTANONE (MEK)	ND	51	5.1
2-HEXANONE	ND	51	5.1
2-CHLOROETHYL VINYL ETHER	ND	51	2
4-METHYL-2-PENTANONE (MIBK)	ND	51	5.1
ACETONE	ND	51	5.1
BENZENE	ND	5.1	2
BROMODICHLOROMETHANE	ND	5.1	2
BROMOFORM	ND	5.1	2
BROMOMETHANE	ND	5.1	3.1
CARBON DISULFIDE	ND	5.1	2
CARBON TETRACHLORIDE	ND	5.1	2
CHLOROBENZENE	ND	5.1	2
CHLOROETHANE	ND	5.1	3.1
CHLOROFORM	ND	5.1	2
CHLORMETHANE	ND	5.1	5.1
CIS-1,2-DICHLOROETHENE	ND	5.1	2
CIS-1,3-DICHLOROPROPENE	ND	5.1	2
DIBROMOCHLOROMETHANE	ND	5.1	2
ETHYLBENZENE	ND	5.1	2
XYLENE, TOTAL	ND	5.1	3.1
METHYLENE CHLORIDE	ND	5.1	2
MTBE	ND	10	2
STYRENE	ND	5.1	2
TOLUENE	ND	5.1	2
TRANS-1,2-DICHLOROETHENE	ND	5.1	2
TRANS-1,3-DICHLOROPROPENE	ND	5.1	2
TRICHLOROETHENE	ND	5.1	2
TETRACHLOROETHENE	ND	5.1	2
VINYL ACETATE	ND	51	2
VINYL CHLORIDE	ND	5.1	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	80-120
BROMOFLUOROBENZENE	93	74-121
TOLUENE-D8	90	81-117

Preservation Date: 09/20/02 15:00

2036

SW 5035/82608  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 12:49
 Sample ID: 818655-B3095 Date Analyzed: 09/24/02 12:49
 Lab Samp ID: I146-06 Dilution Factor: .98
 Lab File ID: RIW763 Matrix : SOIL
 Ext Btch ID: V006164 % Moisture : 10.6
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.5	2.2
1,1,2,2-TETRACHLOROETHANE	ND	5.5	2.2
1,1,2-TRICHLOROETHANE	ND	5.5	2.2
1,1-DICHLOROETHANE	ND	5.5	2.2
1,1-DICHLOROETHENE	ND	5.5	2.2
1,2-DICHLOROETHANE	ND	5.5	2.2
1,2-DICHLOROPROPANE	ND	5.5	2.2
2-BUTANONE (MEK)	ND	55	5.5
2-HEXANONE	ND	55	5.5
2-CHLOROETHYLVINYLETHER	ND	55	2.2
4-METHYL-2-PENTANONE (MIBK)	ND	55	5.5
ACETONE	13J	55	5.5
BENZENE	ND	5.5	2.2
BROMODICHLOROMETHANE	ND	5.5	2.2
BROMOFORM	ND	5.5	2.2
BROMOMETHANE	ND	5.5	3.3
CARBON DISULFIDE	ND	5.5	2.2
CARBON TETRACHLORIDE	ND	5.5	2.2
CHLOROBENZENE	ND	5.5	2.2
CHLOROETHANE	ND	5.5	3.3
CHLOROFORM	ND	5.5	2.2
CHLOROMETHANE	ND	5.5	5.5
CIS-1,2-DICHLOROETHENE	ND	5.5	2.2
CIS-1,3-DICHLOROPROPENE	ND	5.5	2.2
DIBROMOCHLOROMETHANE	ND	5.5	2.2
ETHYLBENZENE	ND	5.5	2.2
XYLENE, TOTAL	ND	5.5	3.3
METHYLENE CHLORIDE	ND	5.5	2.2
MTBE	ND	11	2.2
STYRENE	ND	5.5	2.2
TOLUENE	ND	5.5	2.2
TRANS-1,2-DICHLOROETHENE	ND	5.5	2.2
TRANS-1,3-DICHLOROPROPENE	ND	5.5	2.2
TRICHLOROETHENE	ND	5.5	2.2
TETRACHLOROETHENE	ND	5.5	2.2
VINYL ACETATE	ND	55	2.2
VINYL CHLORIDE	ND	5.5	2.2
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
1,2-DICHLOROETHANE-D4	97	80-120	
BROMOFLUOROBENZENE	89	74-121	
TOLUENE-D8	93	81-117	

Preservation Date: 09/20/02 15:00

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 02I146 Date Extracted: 09/24/02 13:25
 Sample ID: 818655-B3096 Date Analyzed: 09/24/02 13:25
 Lab Samp ID: I146-07 Dilution Factor: .81
 Lab File ID: RIW764 Matrix : SOIL
 Ext Btch ID: V006I64 % Moisture : 13.0
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	4.7	1.9
1,1,2,2-TETRACHLOROETHANE	ND	4.7	1.9
1,1,2-TRICHLOROETHANE	ND	4.7	1.9
1,1-DICHLOROETHANE	ND	4.7	1.9
1,1-DICHLOROETHENE	ND	4.7	1.9
1,2-DICHLOROETHANE	ND	4.7	1.9
1,2-DICHLOROPROPANE	ND	4.7	1.9
2-BUTANONE (MEK)	ND	47	4.7
2-HEXANONE	ND	47	4.7
2-CHLOROETHYL VINYLETHER	ND	47	1.9
4-METHYL-2-PENTANONE (MIBK)	ND	47	4.7
ACETONE	ND	47	4.7
BENZENE	ND	4.7	1.9
BROMODICHLOROMETHANE	ND	4.7	1.9
BROMOFORM	ND	4.7	1.9
BROMOMETHANE	ND	4.7	2.8
CARBON DISULFIDE	ND	4.7	1.9
CARBON TETRACHLORIDE	ND	4.7	1.9
CHLOROBENZENE	ND	4.7	1.9
CHLOROETHANE	ND	4.7	2.8
CHLOROFORM	ND	4.7	1.9
CHLOROMETHANE	ND	4.7	4.7
CIS-1,2-DICHLOROETHENE	ND	4.7	1.9
CIS-1,3-DICHLOROPROPENE	ND	4.7	1.9
DIBROMOCHLOROMETHANE	ND	4.7	1.9
ETHYLBENZENE	ND	4.7	1.9
XYLENE, TOTAL	ND	4.7	2.8
METHYLENE CHLORIDE	ND	4.7	1.9
MTBE	ND	9.3	1.9
STYRENE	ND	4.7	1.9
TOLUENE	ND	4.7	1.9
TRANS-1,2-DICHLOROETHENE	ND	4.7	1.9
TRANS-1,3-DICHLOROPROPENE	ND	4.7	1.9
TRICHLOROETHENE	ND	4.7	1.9
TETRACHLOROETHENE	ND	4.7	1.9
VINYL ACETATE	ND	47	1.9
VINYL CHLORIDE	ND	4.7	1.9

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	80-120
BROMOFLUOROBENZENE	92	74-121
TOLUENE-D8	91	81-117

Preservation Date: 09/20/02 15:00

2038

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
Batch No.   : 021146           Date Extracted: 09/24/02 14:02
Sample ID   : 818655-B3100     Date Analyzed: 09/24/02 14:02
Lab Samp ID: I146-11         Dilution Factor: .82
Lab File ID : RIW765          Matrix       : SOIL
Ext Btch ID : V006164         % Moisture  : 6.3
Calib. Ref.: RIW335          Instrument ID : T-006
=====
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	4.4	1.8
1,1,2,2-TETRACHLOROETHANE	ND	4.4	1.8
1,1,2-TRICHLOROETHANE	ND	4.4	1.8
1,1-DICHLOROETHANE	ND	4.4	1.8
1,1-DICHLOROETHENE	ND	4.4	1.8
1,2-DICHLOROETHANE	ND	4.4	1.8
1,2-DICHLOROPROPANE	ND	4.4	1.8
2-BUTANONE (MEK)	ND	44	4.4
2-HEXANONE	ND	44	4.4
2-CHLOROETHYLVINYLETHER	ND	44	1.8
4-METHYL-2-PENTANONE (MIBK)	ND	44	4.4
ACETONE	28J	44	4.4
BENZENE	ND	4.4	1.8
BROMODICHLOROMETHANE	ND	4.4	1.8
BROMOFORM	ND	4.4	1.8
BROMOMETHANE	ND	4.4	2.6
CARBON DISULFIDE	ND	4.4	1.8
CARBON TETRACHLORIDE	ND	4.4	1.8
CHLOROBENZENE	ND	4.4	1.8
CHLOROETHANE	ND	4.4	2.6
CHLOROFORM	ND	4.4	1.8
CHLOROMETHANE	ND	4.4	4.4
CIS-1,2-DICHLOROETHENE	ND	4.4	1.8
CIS-1,3-DICHLOROPROPENE	ND	4.4	1.8
DIBROMOCHLOROMETHANE	ND	4.4	1.8
ETHYLBENZENE	ND	4.4	1.8
XYLENE, TOTAL	ND	4.4	2.6
METHYLENE CHLORIDE	ND	4.4	1.8
MTBE	ND	8.8	1.8
STYRENE	ND	4.4	1.8
TOLUENE	ND	4.4	1.8
TRANS-1,2-DICHLOROETHENE	ND	4.4	1.8
TRANS-1,3-DICHLOROPROPENE	ND	4.4	1.8
TRICHLOROETHENE	ND	4.4	1.8
TETRACHLOROETHENE	ND	4.4	1.8
VINYL ACETATE	ND	44	1.8
VINYL CHLORIDE	ND	4.4	1.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	80-120
BROMOFLUOROBENZENE	97	74-121
TOLUENE-D8	94	81-117

Preservation Date: 09/20/02 15:00

2039

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 02I146 Date Extracted: 09/24/02 14:39
 Sample ID: 818655-B3101 Date Analyzed: 09/24/02 14:39
 Lab Samp ID: I146-12 Dilution Factor: .93
 Lab File ID: RIW766 Matrix : SOIL
 Ext Btch ID: V006164 % Moisture : 7.3
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYL VINYLETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	3
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE, TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	80-120
BROMOFLUOROBENZENE	91	74-121
TOLUENE-D8	93	81-117

Preservation Date: 09/20/02 15:00

2040

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No.: 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3091	Date Analyzed: 09/24/02 15:10
Lab Samp ID: I146-02	Dilution Factor: 1
Lab File ID: RIX217	Matrix : SOIL
Ext Btch ID: SVI036S	% Moisture : 8.5
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS ( $\mu\text{g}/\text{kg}$ )	RL ( $\mu\text{g}/\text{kg}$ )	MDL ( $\mu\text{g}/\text{kg}$ )
1,2,4-TRICHLOROBENZENE	ND	360	180
1,2-DICHLOROBENZENE	ND	360	180
1,3-DICHLOROBENZENE	ND	360	180
1,4-DICHLOROBENZENE	ND	360	180
2,4,5-TRICHLOROPHENOL	ND	910	180
2,4,6-TRICHLOROPHENOL	ND	360	180
2,4-DIMETHYLPHENOL	ND	360	180
2,4-DINITROPHENOL	ND	360	180
2,4-DINITROTOLUENE	ND	910	180
2,6-DINITROTOLUENE	ND	360	180
2-CHLORONAPHTHALENE	ND	360	180
2-CHLOROPHENOL	ND	360	180
2-METHYLNAPHTHALENE	ND	360	180
2-METHYLPHENOL	ND	360	180
2-NITROANILINE	ND	910	180
2-NITROPHENOL	ND	360	180
3,3'-DICHLOROBENZIDINE	ND	360	180
3-NITROANILINE	ND	910	180
4,6-DINITRO-2-METHYLPHENOL	ND	910	180
4-BROMOPHENYL-PHENYL ETHER	ND	360	180
4-CHLORO-3-METHYLPHENOL	ND	360	180
4-CHLOROANILINE	ND	360	180
4-CHLOROPHENYL-PHENYL ETHER	ND	360	180
4-METHYLPHENOL (1)	ND	360	180
4-NITROANILINE	ND	910	180
4-NITROPHENOL	ND	910	180
ACENAPHTHENE	ND	360	180
ACENAPHTHYLENE	ND	360	180
ANTHRACENE	ND	360	180
BENZO(A)ANTHRACENE	ND	360	180
BENZO(B)FLUORANTHENE	ND	360	180
BENZO(K)FLUORANTHENE	ND	360	180
BENZO(G, H, I)PERYLENE	ND	360	180
BIS(2-CHLOROETHOXY)METHANE	ND	360	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	360	180
BIS(2-ETHYLHEXYL)PHTHALATE	ND	360	180
BUTYLBENZYLPHthalate	ND	360	180
CHRYSENE	ND	360	180
DI-N-BUTYLPHthalate	ND	360	180
DI-N-OCTYLPHthalate	ND	360	180
DIBENZOFURAN	ND	360	180
DIETHYLPHthalate	ND	360	180
DIMETHYLPHthalate	ND	360	180
FLUORANTHENE	ND	360	180
FLUORENE	ND	360	180
HEXAChLOROBUTADIENE	ND	360	180
HEXAChLOROCYCLOPENTADIENE	ND	360	180
HEXAChLOROETHANE	ND	360	180
N-NITROSODIPHENYLAMINE (2)	ND	360	180
NAPHTHALENE	ND	360	180
NITROBENZENE	ND	360	180
PENTACHLOROPHENOL	ND	220	180
PHENANTHRENE	ND	360	180
PHENOL	ND	360	180
PYRENE	ND	360	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	90	25-144
2-FLUOROBIPHENYL	73	34-132
2-FLUOROPHENOL	72	25-132
NITROBENZENE-D5	75	25-135
PHENOL-D5	80	25-135
TERPHENYL-D14	81	32-136

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

3004

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No.: 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3092	Date Analyzed: 09/24/02 15:43
Lab Samp ID: I146-03	Dilution Factor: 1
Lab File ID: RIX218	Matrix : SOIL
Ext Btch ID: SV1036S	% Moisture : 9.2
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	360	180
1,2-DICHLOROBENZENE	ND	360	180
1,3-DICHLOROBENZENE	ND	360	180
1,4-DICHLOROBENZENE	ND	360	180
2,4,5-TRICHLOROPHENOL	ND	910	180
2,4,6-TRICHLOROPHENOL	ND	360	180
2,4-DIMETHYLPHENOL	ND	360	180
2,4-DINITROPHENOL	ND	910	180
2,4-DINITROTOLUENE	ND	360	180
2,6-DINITROTOLUENE	ND	360	180
2-CHLORONAPHTHALENE	ND	360	180
2-CHLOROPHENOL	ND	360	180
2-METHYLNAPHTHALENE	ND	360	180
2-NITROPHENOL	ND	360	180
2-NITROANILINE	ND	910	180
3,3'-DICHLOROBENZIDINE	ND	360	180
3-NITROANILINE	ND	910	180
4,6-DINITRO-2-METHYLPHENOL	ND	910	180
4-BROMOPHENYL-PHENYL ETHER	ND	360	180
4-CHLORO-3-METHYLPHENOL	ND	360	180
4-CHLOROANILINE	ND	360	180
4-CHLOROPHENYL-PHENYL ETHER	ND	360	180
4-METHYLPHENOL (1)	ND	360	180
4-NITROANILINE	ND	910	180
4-NITROPHENOL	ND	910	180
ACENAPHTHENE	ND	360	180
ACENAPHTHYLENE	ND	360	180
ANTHRACENE	ND	360	180
BENZO(A)ANTHRACENE	ND	360	180
BENZO(B)FLUORANTHENE	ND	360	180
BENZO(K)FLUORANTHENE	ND	360	180
BENZO(G,H,I)PERYLENE	ND	360	180
BIS(2-CHLOROETHOXY)METHANE	ND	360	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	360	180
BIS(2-ETHYLHEXYL)PHTHALATE	ND	360	180
BUTYLBENZYLPHthalate	ND	360	180
CHRYSENE	ND	360	180
DI-N-BUTYLPHthalate	ND	360	180
DI-N-OCTYLPHthalate	ND	360	180
DIBENZOFURAN	ND	360	180
DIETHYLPHthalate	ND	360	180
DIMETHYLPHthalate	ND	360	180
FLUORANTHENE	ND	360	180
FLUORENE	ND	360	180
HEXAChLOROBUTADIENE	ND	360	180
HEXAChLOROCYCLOPENTADIENE	ND	360	180
HEXAChLOROETHANE	ND	360	180
N-NITROSODIPHENYLAMINE (2)	ND	360	180
NAPHTHALENE	ND	360	180
NITROBENZENE	ND	360	180
PENTACHLOROPHENOL	ND	220	180
PHENANTHRENE	ND	360	180
PHENOL	ND	360	180
PYRENE	ND	360	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	88	25-144
2-FLUOROBIPHENYL	77	24-135
2-FLUOROPHENOL	77	25-135
NITROBENZENE-D5	80	25-135
PHENOL-D5	85	25-135
TERPHENYL-D14	82	32-136

RL: Reporting Limit  
 (1): Cannot be separated from 3-Methylphenol  
 (2): Cannot be separated from Diphenylamine

**SW 3550B/8270C**  
**SEMI VOLATILE ORGANICS BY GC/MS**

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
Batch No. : 021146 Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3093 Date Analyzed: 09/24/02 16:15
Lab Samp ID: 1146-04 Dilution Factor: 1
Lab File ID: RIX219 Matrix : SOIL
Ext Btch ID: SV1036S % Moisture : 8.2
Calib. Ref.: RHX056 Instrument ID : T-042
=====
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	360	180
1,2-DICHLOROBENZENE	ND	360	180
1,3-DICHLOROBENZENE	ND	360	180
1,4-DICHLOROBENZENE	ND	360	180
2,4,5-TRICHLOROPHENOL	ND	900	180
2,4,6-TRICHLOROPHENOL	ND	360	180
2,4-DICHLOROPHENOL	ND	360	180
2,4-DIMETHYLPHENOL	ND	360	180
2,4-DINITROPHENOL	ND	900	180
2,4-DINITROTOLUENE	ND	360	180
2,6-DINITROTOLUENE	ND	360	180
2-CHLORONAPHTHALENE	ND	360	180
2-CHLOROPHENOL	ND	360	180
2-METHYLNAPHTHALENE	ND	360	180
2-METHYLPHENOL	ND	360	180
2-NITROANILINE	ND	900	180
2-NITROPHENOL	ND	360	180
3,3'-DICHLOROBENZIDINE	ND	360	180
3-NITROANILINE	ND	900	180
4,6-DINITRO-2-METHYLPHENOL	ND	900	180
4-BROMOPHENYL-PHENYL ETHER	ND	360	180
4-CHLORO-3-METHYLPHENOL	ND	360	180
4-CHLOROANILINE	ND	360	180
4-CHLOROPHENYL-PHENYL ETHER	ND	360	180
4-METHYLPHENOL (1)	ND	360	180
4-NITROANILINE	ND	900	180
4-NITROPHENOL	ND	900	180
ACENAPHTHENE	ND	360	180
ACENAPHTHYLENE	ND	360	180
ANTHRACENE	ND	360	180
BENZO(A)ANTHRACENE	ND	360	180
BENZO(B)FLUORANTHENE	ND	360	180
BENZO(K)FLUORANTHENE	ND	360	180
BENZO(G,H,I)PERYLENE	ND	360	180
BIS(2-CHLOROETHOXY)METHANE	ND	360	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	360	180
BIS(2-ETHYLHEXYL)PHTHALATE	ND	360	180
BUTYLBENZYL PHTHALATE	ND	360	180
CHRYSENE	ND	360	180
DI-N-BUTYL PHTHALATE	ND	360	180
DI-N-OCTYL PHTHALATE	ND	360	180
DIBENZOFURAN	ND	360	180
DIETHYL PHTHALATE	ND	360	180
DIMETHYL PHTHALATE	ND	360	180
FLUORANTHENE	ND	360	180
FLUORENE	ND	360	180
HEXA CHLOROBUTADIENE	ND	360	180
HEXA CHLOROCYCLOPENTADIENE	ND	360	180
HEXA CHLOROETHANE	ND	360	180
N-NITROSODIPHENYLAMINE (2)	ND	360	180
NAPHTHALENE	ND	360	180
NITROBENZENE	ND	360	180
PENTACHLOROPHENOL	ND	220	180
PHENANTHRENE	ND	360	180
PHENOL	ND	360	180
PYRENE	ND	360	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	82	25-144
2-FLUOROBIPHENYL	72	34-135
2-FLUOROPHENOL	71	25-135
NITROBENZENE-D5	74	25-135
PHENOL-D5	78	25-135
TERPHENYL-D14	79	32-136

RL: Reporting Limit  
 (1): Cannot be separated from 3-Methylphenol  
 (2): Cannot be separated from Diphenylamine

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No.: 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3094	Date Analyzed: 09/24/02 16:48
Lab Samp ID: I146-05	Dilution Factor: 1
Lab File ID: RIX220	Matrix : SOIL
Ext Btch ID: SV1036S	% Moisture : 6.2
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	350	180
1,2-DICHLOROBENZENE	ND	350	180
1,3-DICHLOROBENZENE	ND	350	180
1,4-DICHLOROBENZENE	ND	350	180
2,4,5-TRICHLOROPHENOL	ND	880	180
2,4,6-TRICHLOROPHENOL	ND	350	180
2,4-DICHLOROPHENOL	ND	350	180
2,4-DIMETHYLPHENOL	ND	350	180
2,4-DINITROPHENOL	ND	880	180
2,4-DINITROTOLUENE	ND	350	180
2,6-DINITROTOLUENE	ND	350	180
2-CHLORONAPHTHALENE	ND	350	180
2-CHLOROPHENOL	ND	350	180
2-METHYLNAPHTHALENE	ND	350	180
2-METHYLPHENOL	ND	350	180
2-NITROANILINE	ND	880	180
2-NITROPHENOL	ND	350	180
3,3'-DICHLOROBENZIDINE	ND	350	180
3-NITROANILINE	ND	880	180
4,6-DINITRO-2-METHYLPHENOL	ND	880	180
4-BROMOPHENYL-PHENYL ETHER	ND	350	180
4-CHLORO-3-METHYLPHENOL	ND	350	180
4-CHLOROANILINE	ND	350	180
4-CHLOROPHENYL-PHENYL ETHER	ND	350	180
4-METHYLPHENOL (1)	ND	350	180
4-NITROANILINE	ND	880	180
4-NITROPHENOL	ND	880	180
ACENAPHTHENE	ND	350	180
ACENAPHTHYLENE	ND	350	180
ANTHRACENE	ND	350	180
BENZO(A)ANTHRACENE	ND	350	180
BENZO(B)FLUORANTHENE	ND	350	180
BENZO(K)FLUORANTHENE	ND	350	180
BENZO(G,H,I)PERYLENE	ND	350	180
BIS(2-CHLOROETHOXY)METHANE	ND	350	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	350	180
BUTYLBENZYLPHthalate	ND	350	180
CHRYSENE	ND	350	180
DI-N-BUTYLPHthalate	ND	350	180
DI-N-OCTYLPHthalate	ND	350	180
DIBENZOFURAN	ND	350	180
DIETHYLPHthalate	ND	350	180
DIMETHYLPHthalate	ND	350	180
FLUORANTHENE	ND	350	180
FLUORENE	ND	350	180
HEXAChLOROBUTADIENE	ND	350	180
HEXAChLOROCYCLOPENTADIENE	ND	350	180
HEXAChLOROETHANE	ND	350	180
N-NITROSODIPHENYLAMINE (2)	ND	350	180
NAPHTHALENE	ND	350	180
NITROBENZENE	ND	350	180
PENTACHLOROPHENOL	ND	210	180
PHENANTHRENE	ND	350	180
PHENOL	ND	350	180
PYRENE	ND	350	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	83	25-144
2-FLUOROBIPHENYL	72	34-135
2-FLUOROPHENOL	75	25-135
NITROBENZENE-D5	77	25-135
PHENOL-D5	82	25-135
TERPHENYL-D14	74	32-136

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

**SW 3550B/8270C**  
**SEMI VOLATILE ORGANICS BY GC/MS**

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No. : 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3095	Date Analyzed: 09/24/02 17:21
Lab Samp ID: I146-06	Dilution Factor: 1
Lab File ID: RIX221	Matrix : SOIL
Ext Btch ID: SV1036S	% Moisture : 10.6
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	370	190
1,2-DICHLOROBENZENE	ND	370	190
1,3-DICHLOROBENZENE	ND	370	190
1,4-DICHLOROBENZENE	ND	370	190
2,4,5-TRICHLOROPHENOL	ND	930	190
2,4,6-TRICHLOROPHENOL	ND	370	190
2,4-DICHLOROPHENOL	ND	370	190
2,4-DIMETHYLPHENOL	ND	370	190
2,4-DINITROPHENOL	ND	930	190
2,4-DINITROTOLUENE	ND	370	190
2,6-DINITROTOLUENE	ND	370	190
2-CHLORONAPHTHALENE	ND	370	190
2-CHLOROPHENOL	ND	370	190
2-METHYLNAPHTHALENE	ND	370	190
2-METHYLPHENOL	ND	370	190
2-NITROANILINE	ND	930	190
2-NITROPHENOL	ND	370	190
3,3'-DICHLOROBENZIDINE	ND	370	190
3-NITROANILINE	ND	930	190
4,6-DINITRO-2-METHYLPHENOL	ND	930	190
4-BROMOPHENYL-PHENYL ETHER	ND	370	190
4-CHLORO-3-METHYLPHENOL	ND	370	190
4-CHLOROANILINE	ND	370	190
4-CHLOROPHENYL-PHENYL ETHER	ND	370	190
4-METHYLPHENOL (1)	ND	370	190
4-NITROANILINE	ND	930	190
4-NITROPHENOL	ND	930	190
ACENAPHTHENE	ND	370	190
ACENAPHTHYLENE	ND	370	190
ANTHRACENE	ND	370	190
BENZO(A)ANTHRACENE	ND	370	190
BENZO(B)FLUORANTHENE	ND	370	190
BENZO(K)FLUORANTHENE	ND	370	190
BENZO(G,H,I)PERYLENE	ND	370	190
BIS(2-CHLOROETHOXY)METHANE	ND	370	190
BIS(2-CHLOROISOPROPYL)ETHER	ND	370	190
BIS(2-ETHYLHEXYL)PHTHALATE	ND	370	190
BUTYLBENZYLPHTHALATE	ND	370	190
CHRYSENE	ND	370	190
DI-N-BUTYLPHTHALATE	ND	370	190
DI-N-OCTYLPHTHALATE	ND	370	190
DIBENZOFURAN	ND	370	190
DIETHYLPHTHALATE	ND	370	190
DIMETHYLPHTHALATE	ND	370	190
FLUORANTHENE	ND	370	190
FLUORENE	ND	370	190
HEXAChLOROBUTADIENE	ND	370	190
HEXAChLOROCYCLOPENTADIENE	ND	370	190
HEXAChLOROETHANE	ND	370	190
N-NITROSDIPHENYLAMINE (2)	ND	370	190
NAPHTHALENE	ND	370	190
NITROBENZENE	ND	370	190
PENTACHLOROPHENOL	ND	220	190
PHENANTHRENE	ND	370	190
PHENOL	ND	370	190
PYRENE	ND	370	190

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	84	25-144
2'FLUOROBIPHENYL	75	34-135
2-FLUOROPHENOL	75	25-135
NITROBENZENE-D5	80	25-135
PHENOL-D5	80	25-135
TERPHENYL-D14	80	32-136

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No.: 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3096	Date Analyzed: 09/24/02 17:53
Lab Samp ID: I146-07	Dilution Factor: 1
Lab File ID: RIX222	Matrix : SOIL
Ext Btch ID: SV1036S	% Moisture : 13.0
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	380	190
1,2-DICHLOROBENZENE	ND	380	190
1,3-DICHLOROBENZENE	ND	380	190
1,4-DICHLOROBENZENE	ND	380	190
2,4,5-TRICHLOROPHENOL	ND	950	190
2,4,6-TRICHLOROPHENOL	ND	380	190
2,4-DICHLOROPHENOL	ND	380	190
2,4-DINITROPHENOL	ND	950	190
2,4-DINITROTOLUENE	ND	380	190
2,6-DINITROTOLUENE	ND	380	190
2-CHLORONAPHTHALENE	ND	380	190
2-CHLOROPHENOL	ND	380	190
2-METHYLNAPHTHALENE	ND	380	190
2-METHYLPHENOL	ND	380	190
2-NITROANILINE	ND	950	190
2-NITROPHENOL	ND	380	190
3,3'-DICHLOROBENZIDINE	ND	380	190
3-NITROANILINE	ND	950	190
4,6-DINITRO-2-METHYLPHENOL	ND	950	190
4-BROMOPHENYL-PHENYL ETHER	ND	380	190
4-CHLORO-3-METHYLPHENOL	ND	380	190
4-CHLOROANILINE	ND	380	190
4-CHLOROPHENYL-PHENYL ETHER	ND	380	190
4-METHYLPHENOL (1)	ND	380	190
4-NITROANILINE	ND	950	190
4-NITROPHENOL	ND	950	190
ACENAPHTHENE	ND	380	190
ACENAPHTHYLENE	ND	380	190
ANTHRACENE	ND	380	190
BENZO(A)ANTHRACENE	ND	380	190
BENZO(B)FLUORANTHENE	ND	380	190
BENZO(K)FLUORANTHENE	ND	380	190
BENZO(G,H,I)PERYLENE	ND	380	190
BIS(2-CHLOROETHOXY)METHANE	ND	380	190
BIS(2-CHLOROISOPROPYL)ETHER	ND	380	190
BIS(2-ETHYLHEXYL)PHTHALATE	ND	380	190
BUTYLBENZYLPHTHALATE	ND	380	190
CHRYSENE	ND	380	190
DI-N-BUTYLPHTHALATE	ND	380	190
DI-N-OCTYLPHTHALATE	ND	380	190
DIBENZOFURAN	ND	380	190
DIETHYLPHTHALATE	ND	380	190
DIMETHYLPHTHALATE	ND	380	190
FLUORANTHENE	ND	380	190
FLUORENE	ND	380	190
HEXAChLOROBUTADIENE	ND	380	190
HEXAChLOROCYCLOPENTADIENE	ND	380	190
HEXAChLOROETHANE	ND	380	190
N-NITROSODIPHENYLAMINE (2)	ND	380	190
NAPHTHALENE	ND	380	190
NITROBENZENE	ND	380	190
PENTACHLOROPHENOL	ND	230	190
PHENANTHRENE	ND	380	190
PHENOL	ND	380	190
PYRENE	ND	380	190

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	81	25-144
2-FLUOROBIPHENYL	66	34-135
2-FLUOROPHENOL	67	23-135
NITROBENZENE-D5	67	25-135
PHENOL-D5	73	25-135
TERPHENYL-D14	76	32-136

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No.: 02I146 Date Extracted: 09/23/02 18:00
 Sample ID: 818655-B3100 Date Analyzed: 09/24/02 18:26
 Lab Samp ID: I146-11 Dilution Factor: 1
 Lab File ID: RIX223 Matrix : SOIL
 Ext Btch ID: SVI036S % Moisture : 6.3
 Calib. Ref.: RHX056 Instrument ID : T-042
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	350	180
1,2-DICHLOROBENZENE	ND	350	180
1,3-DICHLOROBENZENE	ND	350	180
1,4-DICHLOROBENZENE	ND	350	180
2,4,5-TRICHLOROPHENOL	ND	890	180
2,4,6-TRICHLOROPHENOL	ND	350	180
2,4-DICHLOROPHENOL	ND	350	180
2,4-DIMETHYLPHENOL	ND	350	180
2,4-DINITROPHENOL	ND	890	180
2,4-DINITROTOLUENE	ND	350	180
2,6-DINITROTOLUENE	ND	350	180
2-CHLORONAPHTHALENE	ND	350	180
2-CHLOROPHENOL	ND	350	180
2-METHYLNAPHTHALENE	ND	350	180
2-METHYLPHENOL	ND	350	180
2-NITROANILINE	ND	890	180
2-NITROPHENOL	ND	350	180
3,3'-DICHLOROBENZIDINE	ND	350	180
3-NITROANILINE	ND	890	180
4,6-DINITRO-2-METHYLPHENOL	ND	890	180
4-BROMOPHENYL-PHENYL ETHER	ND	350	180
4-CHLORO-3-METHYLPHENOL	ND	350	180
4-CHLOROANILINE	ND	350	180
4-CHLOROPHENYL-PHENYL ETHER	ND	350	180
4-METHYLPHENOL (1)	ND	350	180
4-NITROANILINE	ND	890	180
4-NITROPHENOL	ND	890	180
ACENAPHTHENE	ND	350	180
ACENAPHTHYLENE	ND	350	180
ANTHRACENE	ND	350	180
BENZO(A)ANTHRACENE	ND	350	180
BENZO(B)FLUORANTHENE	ND	350	180
BENZO(K)FLUORANTHENE	ND	350	180
BENZO(G,H,I)PERYLENE	ND	350	180
BIS(2-CHLOROETHOXY)METHANE	ND	350	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	350	180
BIS(2-ETHYLHEXYL)PHTHALATE	ND	350	180
BUTYLBENZYLPHthalate	ND	350	180
CHRYSENE	ND	350	180
DI-N-BUTYLPHthalate	ND	350	180
DI-N-OCTYLPHthalate	ND	350	180
DIBENZOFURAN	ND	350	180
DIETHYLPHthalate	ND	350	180
DIMETHYLPHthalate	ND	350	180
FLUORANTHENE	ND	350	180
FLUORENE	ND	350	180
HEXAChLOROBUTADIENE	ND	350	180
HEXAChLOROCYCLOPENTADIENE	ND	350	180
HEXAChLOROETHANE	ND	350	180
N-NITROSODIPHENYLAMINE (2)	ND	350	180
NAPHTHALENE	ND	350	180
NITROBENZENE	ND	350	180
PENTACHLOROPHENOL	ND	210	180
PHENANTHRENE	ND	350	180
PHENOL	ND	350	180
PYRENE	ND	350	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	80	25-144
2-FLUOROBIPHENYL	64	34-135
2-FLUOROPHENOL	64	25-135
NITROBENZENE-D5	66	25-135
PHENOL-D5	70	25-135
TERPHENYL-D14	71	32-136

RL: Reporting Limit  
 (1): Cannot be separated from 3-Methylphenol  
 (2): Cannot be separated from Diphenylamine

3010

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No. : 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3101	Date Analyzed: 09/24/02 18:58
Lab Samp ID: I146-12	Dilution Factor: 1
Lab File ID: RIX224	Matrix : SOIL
Ext Btch ID: SVI036S	% Moisture : 7.3
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	360	180
1,2-DICHLOROBENZENE	ND	360	180
1,3-DICHLOROBENZENE	ND	360	180
1,4-DICHLOROBENZENE	ND	360	180
2,4,5-TRICHLOROPHENOL	ND	900	180
2,4,6-TRICHLOROPHENOL	ND	360	180
2,4-DICHLOROPHENOL	ND	360	180
2,4-DIMETHYLPHENOL	ND	360	180
2,4-DINITROPHENOL	ND	900	180
2,4-DINITROTOLUENE	ND	360	180
2,6-DINITROTOLUENE	ND	360	180
2-CHLORONAPHTHALENE	ND	360	180
2-CHLOROPHENOL	ND	360	180
2-METHYLNAPHTHALENE	ND	360	180
2-METHYLPHENOL	ND	360	180
2-NITROANILINE	ND	900	180
2-NITROPHENOL	ND	360	180
3,3'-DICHLOROBENZIDINE	ND	360	180
3-NITROANILINE	ND	900	180
4,6-DINITRO-2-METHYLPHENOL	ND	900	180
4-BROMOPHENYL-PHENYL ETHER	ND	360	180
4-CHLORO-3-METHYLPHENOL	ND	360	180
4-CHLOROANILINE	ND	360	180
4-CHLOROPHENYL-PHENYL ETHER	ND	360	180
4-METHYLPHENOL (1)	ND	360	180
4-NITROANILINE	ND	900	180
4-NITROPHENOL	ND	900	180
ACENAPHTHENE	ND	360	180
ACENAPHTHYLENE	ND	360	180
ANTHRACENE	ND	360	180
BENZO(A)ANTHRACENE	ND	360	180
BENZO(B)FLUORANTHENE	ND	360	180
BENZO(K)FLUORANTHENE	ND	360	180
BENZO(G,H,I)PERYLENE	ND	360	180
BIS(2-CHLOROETHOXY)METHANE	ND	360	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	360	180
BUTYLBENZYLPHthalate	ND	360	180
CHRYSENE	ND	360	180
DI-N-BUTYLPHthalate	ND	360	180
DI-N-OCTYLPHthalate	ND	360	180
DIBENZOFURAN	ND	360	180
DIETHYLPHthalate	ND	360	180
DIMETHYLPHthalate	ND	360	180
FLUORANTHENE	ND	360	180
FLUORENE	ND	360	180
HEXAChLOROBUTADIENE	ND	360	180
HEXAChLOROCYCLOPENTADIENE	ND	360	180
HEXAChLOROETHANE	ND	360	180
N-NITROSODIPHENYLAMINE (2)	ND	360	180
NAPHTHALENE	ND	360	180
NITROBENZENE	ND	360	180
PENTACHLOROPHENOL	ND	220	180
PHENANTHRENE	ND	360	180
PHENOL	ND	360	180
PYRENE	ND	360	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	79	25-144
2-FLUOROBIPHENYL	66	34-135
2-FLUOROPHENOL	64	25-135
NITROBENZENE-D5	65	25-135
PHENOL-D5	71	25-135
TERPHENYL-D14	79	32-136

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

3011

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No.: 02I146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-B3091 Date Analyzed: 09/24/02 17:05  
Lab Samp ID: I146-02 Dilution Factor: 1  
Lab File ID: RIZ357 Matrix : SOIL  
Ext Btch ID: SVI036S % Moisture : 8.5  
Calib. Ref.: RH2077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	36	11
BIS(2-CHLOROETHYL)ETHER	ND	36	16
DIBENZO(A,H)ANTHRACENE	ND	36	11
HEXACHLOROBENZENE	ND	82	11
INDENO(1,2,3-CD)PYRENE	ND	38	11
N-NITROSO-DI-N-PROPYLAMINE	ND	36	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	90	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

3043

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No. : 02I146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-B3092 Date Analyzed: 09/24/02 17:35  
Lab Samp ID: I146-03 Dilution Factor: 1  
Lab File ID: RIZ358 Matrix : SOIL  
Ext Btch ID: SVI036S % Moisture : 9.2  
Calib. Ref.: RHZ077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	36	11
BIS(2-CHLOROETHYL)ETHER	ND	36	17
DIBENZO(A,H)ANTHRACENE	ND	36	11
HEXACHLOROBENZENE	ND	83	11
INDENO(1,2,3-CD)PYRENE	ND	39	11
N-NITROSO-DI-N-PROPYLAMINE	ND	36	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	95	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

3044

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No. : 02I146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-B3093 Date Analyzed: 09/24/02 18:08  
Lab Samp ID: I146-04 Dilution Factor: 1  
Lab File ID: R1Z359 Matrix : SOIL  
Ext Btch ID: SV1036S % Moisture : 8.2  
Calib. Ref.: RHZ077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	36	11
BIS(2-CHLOROETHYL)ETHER	ND	36	16
DIBENZO(A,H)ANTHRACENE	ND	36	11
HEXACHLOROBENZENE	ND	82	11
INDENO(1,2,3-CD)PYRENE	ND	38	11
N-NITROSO-DI-N-PROPYLAMINE	ND	36	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	96	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No. : 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3094	Date Analyzed: 09/24/02 18:38
Lab Samp ID: I146-05	Dilution Factor: 1
Lab File ID: RIZ360	Matrix : SOIL
Ext Btch ID: SVI036S	% Moisture : 6.2
Calib. Ref.: RHZ077	Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	35	11
BIS(2-CHLOROETHYL)ETHER	ND	35	16
DIBENZO(A,H)ANTHRACENE	ND	35	11
HEXACHLOROBENZENE	ND	80	11
INDENO(1,2,3-CD)PYRENE	ND	37	11
N-NITROSO-DI-N-PROPYLAMINE	ND	35	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	86	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

3046

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No.: 021146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-B3095 Date Analyzed: 09/24/02 19:08  
Lab Samp ID: I146-06 Dilution Factor: 1  
Lab File ID: RIZ361 Matrix : SOIL  
Ext Btch ID: SV1036S % Moisture : 10.6  
Calib. Ref.: RHZ077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	37	11
BIS(2-CHLOROETHYL)ETHER	ND	37	17
DIBENZO(A,H)ANTHRACENE	ND	37	11
HEXACHLOROBENZENE	ND	84	11
INDENO(1,2,3-CD)PYRENE	ND	39	11
N-NITROSO-DI-N-PROPYLAMINE	ND	37	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	96	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No.: 02I146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-B3096 Date Analyzed: 09/25/02 12:27  
Lab Samp ID: I146-07R Dilution Factor: 1  
Lab File ID: RIZ373 Matrix : SOIL  
Ext Btch ID: SVI036S % Moisture : 13.0  
Calib. Ref.: RHZ077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	38	11
BIS(2-CHLOROETHYL)ETHER	ND	38	17
DIBENZO(A,H)ANTHRACENE	ND	38	11
HEXACHLOROBENZENE	ND	86	11
INDENO(1,2,3-CD)PYRENE	ND	40	11
N-NITROSO-DI-N-PROPYLAMINE	ND	38	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	81	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No.: 02I146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3100	Date Analyzed: 09/25/02 12:57
Lab Samp ID: I146-11R	Dilution Factor: 1
Lab File ID: R12374	Matrix : SOIL
Ext Btch ID: SV1036S	% Moisture : 6.3
Calib. Ref.: RHZ077	Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	35	11
BIS(2-CHLOROETHYL)ETHER	ND	35	16
DIBENZO(A,H)ANTHRACENE	ND	35	11
HEXACHLOROBENZENE	ND	80	11
INDENO(1,2,3-CD)PYRENE	ND	37	11
N-NITROSO-DI-N-PROPYLAMINE	ND	35	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	77	32-136	

RL: Reporting Limit

- (1): Cannot be separated from 3-Methylphenol  
(2): Cannot be separated from Diphenylamine

3049

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No. : 021146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-83101 Date Analyzed: 09/25/02 13:27  
Lab Samp ID: I146-12R Dilution Factor: 1  
Lab File ID: RIZ375 Matrix : SOIL  
Ext Btch ID: SVI036S % Moisture : 7.3  
Calib. Ref.: RH2077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	36	11
BIS(2-CHLOROETHYL)ETHER	ND	36	16
DIBENZO(A,H)ANTHRACENE	ND	36	11
HEXACHLOROBENZENE	ND	81	11
INDENO(1,2,3-CD)PYRENE	ND	38	11
N-NITROSO-DI-N-PROPYLAMINE	ND	36	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	86	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

**METHOD 5030B/M8015**  
**TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP**

Client : SHAW E&I  
 Project : CTO 0024, EL TORO  
 Batch No. : 021146

Matrix : WATER  
 Instrument ID : GCT039

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATE/TIME	Extraction DATE/TIME	L.FID	CAL REF	PREP BATCH	Collection DATE/TIME	Received DATETIME
NBLK1W	VA39148B	ND	91	1	NA	.1	.005	09/21/0223:22	E121017A	E121013A	VA39148	NA	09/21/02
LCS1W	VA39148L	.514	122	1	NA	.1	.005	09/21/0223:57	E121018A	E121013A	VA39148	NA	09/21/02
LCD1W	VA39148C	.476	111	1	NA	.1	.005	09/22/0200:31	E121019A	E121013A	VA39148	NA	09/22/02
818655-B3102	1146-13	.021J	92	1	NA	.1	.005	09/22/0203:21	E121024A	E121013A	VA39148	09/19/02	

RL : Reporting Limit

4004

METHOD 5035/M8015  
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : SHAW E&I  
Project : CTO 0024, EL TORC  
Batch No. : 021146

Matrix : SOIL  
Instrument ID : GCT039

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/kg)	SURR (%)	DLF MOIST (mg/kg)	RL	MDL (mg/kg)	Analysis DATETIME	Extraction DATETIME	L.FID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
NBLK1S	VM39143B	ND	100	1	NA	10	.524	09/21/0215:27	E121003A	E121002A	VM39143	NA	09/21/02
LCS1S	VM39143L	30.1	120	1	NA	10	.524	09/21/0216:01	E121004A	E121002A	VM39143	NA	09/21/02
LCD1S	VM39143C	29.5	119	1	NA	10	.524	09/21/0216:35	E121005A	E121002A	VM39143	NA	09/21/02
818655-B3091	I146-02	ND	98	1.67	8.5	18	.96	09/21/0217:43	E121007A	E121002A	VM39143	09/19/02	09/19/02
818655-B3092	I146-03	ND	99	.89	9.2	9.8	.51	09/21/0218:17	E121008A	E121002A	VM39143	09/19/02	09/19/02
818655-B3093	I146-04	ND	97	1.09	8.2	12	.62	09/21/0218:51	E121009A	E121002A	VM39143	09/19/02	09/19/02
818655-B3094	I146-05	ND	94	.98	6.2	10	.55	09/21/0219:25	E121010A	E121002A	VM39143	09/19/02	09/19/02
818655-B3095	I146-06	ND	94	.85	10.6	9.5	.5	09/21/0219:59	E121011A	E121002A	VM39143	09/19/02	09/19/02
818655-B3096	I146-07	ND	94	.85	13.0	9.8	.51	09/21/0220:33	E121012A	E121002A	VM39143	09/19/02	09/19/02
818655-B3100	I146-11	ND	77	.93	6.3	9.9	.52	09/21/0222:14	E121015A	E121015A	VM39143	09/19/02	09/19/02
818655-B3101	I146-12	ND	89	.93	7.3	10	.53	09/21/0222:48	E121016A	E121016A	VM39143	09/19/02	09/19/02

RL = Reporting Limit  
Methanol Extraction : 09/20/02 16:00

4005

**METHOD 3520C/M8015**  
**TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION**

Client : SHAW E&I                          Matrix : WATER  
 Project : CTO 0024, EL TORO                Instrument ID : GCT050  
 Batch No. : 021146

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SUR1 (%)	SUR2 (%)	DLF MOIST (%)	RL	MDL (mg/L)	Analysis DATE/TIME	Extraction DATE/TIME	LFID	CAL REF	Collection DATE/TIME	PREP BATCH	Received DATE/TIME
MBLK1W	DS1028WB	ND	105	125	1	NA	.1	.1	09/24/0223:30	T123046A	DS1028W	NA	NA	09/24/02
LCS1W	DS1028WL	5.16	113	134	1	NA	.1	.1	09/25/0200:19	T123047A	DS1028W	NA	NA	09/24/02
LCD1W	DS1028WY	4.97	106	116	1	NA	.1	.1	09/24/0212:00	T125004A	DS1028W	NA	NA	09/24/02
818655-B3102	11146-13	ND	119	135	.94	NA	.094	.094	09/25/0201:57	09/24/0212:00	T123049A	DS1028W	09/19/02	09/19/02

RL : Reporting Limit

SURR1 : Bromobenzene

SURR2 : Hexacosane

Parameter H-C Range  
diesel C10-C38

CA LUFT/M8015  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : SHAW E&I  
Project : CTO 0024, EL TORO  
Batch No. : 021146

Matrix : SOIL  
Instrument ID : GCT043

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/kg)	SUR1 (%)	SUR2 (%)	RL	MDL (mg/kg)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME	
MBLK1S	DS1029SB	ND	101	86	1	NA	10	4	09/25/0212:46	09/23/0217:00	D125005A	D125002A	DS1029S	NA
LCS1S	DS1029SL	469	95	77	1	NA	10	4	09/25/0213:32	09/23/0217:00	D125006A	D125002A	DS1029S	NA
818655-B3091	I146-02	ND	101	88	1	8.5	11	4.4	09/25/0214:17	09/23/0217:00	D125007A	D125002A	DS1029S	09/19/02
818655-B3092	I146-03	ND	96	81	1	9.2	11	4.4	09/25/0215:03	09/23/0217:00	D125008A	D125002A	DS1029S	09/19/02
818655-B3093	I146-04	ND	91	74	1	8.2	11	4.4	09/25/0215:48	09/23/0217:00	D125009A	D125002A	DS1029S	09/19/02
818655-B3094	I146-05	ND	103	81	1	6.2	11	4.3	09/25/0216:34	09/23/0217:00	D125010A	D125002A	DS1029S	09/19/02
818655-B3095	I146-06	ND	91	70	1	10.6	11	4.5	09/25/0217:20	09/23/0217:00	D125011A	D125002A	DS1029S	09/19/02
818655-B3096	I146-07	ND	92	71	1	13.0	11	4.6	09/25/0218:05	09/23/0217:00	D125012A	D125002A	DS1029S	09/19/02
818655-B3100	I146-11	ND	91	67	1	6.3	11	4.3	09/25/0218:51	09/23/0217:00	D125013A	D125002A	DS1029S	09/19/02
818655-B3101	I146-12	7.2J	101	75	1	7.3	11	4.3	09/25/0221:07	09/23/0217:00	D125016A	D125014A	DS1029S	09/19/02
818655-B3101MS	I146-12M	461	94	68	1	7.3	10.8	4.31	09/25/0221:53	09/23/0217:00	D125017A	D125014A	DS1029S	09/19/02
818655-B3101MSD	I146-12S	472	91	68	1	7.3	10.8	4.31	09/25/0222:38	09/23/0217:00	D125018A	D125014A	DS1029S	09/19/02

RL Reporting Limit

SUR1 Bromobenzene

SUR2 Hexacosane

Parameter H-C Range  
Diesel C10-C38

5005

SW3550B/8081A  
PESTICIDES

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 16:30
 Sample ID: 818655-B3091 Date Analyzed: 09/24/02 21:39
 Lab Samp ID: I146-02 Dilution Factor: 1
 Lab File ID: SI24018A Matrix : SOIL
 Ext Btch ID: CPI038S % Moisture : 8.5
 Calib. Ref.: SI24003A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
ALPHA-BHC	(ND)	ND	.0022	.00022
GAMMA-BHC (LINDANE)	(ND)	ND	.0022	.00022
BETA-BHC	(ND)	ND	.0022	.00022
HEPTACHLOR	(ND)	ND	.0022	.0011
DELTA-BHC	(ND)	ND	.0022	.00022
ALDRIN	(ND)	ND	.0022	.00055
HEPTACHLOR EPOXIDE	(ND)	ND	.0022	.00022
GAMMA-CHLORDANE	(ND)	ND	.0022	.00022
ALPHA-CHLORDANE	(ND)	ND	.0022	.00022
ENDOSULFAN I	(ND)	ND	.0044	.0011
4,4'-DDE	(ND)	ND	.0044	.0011
DIELDRIN	(ND)	ND	.0044	.00055
ENDRIN	(ND)	ND	.0033	.0011
4,4'-DDD	(ND)	ND	.0044	.0011
ENDOSULFAN II	(ND)	ND	.0044	.00055
4,4'-DDT	(ND)	ND	.0044	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0044	.00055
ENDOSULFAN SULFATE	(ND)	ND	.0044	.00055
ENDRIN KETONE	(ND)	ND	.0033	.0011
METHOXYPHORON	(ND)	ND	.022	.0044
TOXAPHENE	(ND)	ND	.11	.0087
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(96)	86	35-135	
DECACHLOROBIPHENYL	(97)	91	25-143	

RL : Reporting limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

SW3550B/8081A  
PESTICIDES

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 16:30
 Sample ID: 818655-B3092 Date Analyzed: 09/24/02 22:05
 Lab Samp ID: I146-03 Dilution Factor: 1
 Lab File ID: SI24019A Matrix : SOIL
 Ext Btch ID: CPI038S % Moisture : 9.2
 Calib. Ref.: SI24003A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL	MDL
	(mg/kg)		(mg/kg)	(mg/kg)
ALPHA-BHC	(ND)	ND	.0022	.00022
GAMMA-BHC (LINDANE)	(ND)	ND	.0022	.00022
BETA-BHC	(ND)	ND	.0022	.00022
HEPTACHLOR	(ND)	ND	.0022	.0011
DELTA-BHC	(ND)	ND	.0022	.00022
ALDRIN	(ND)	ND	.0022	.00055
HEPTACHLOR EPOXIDE	(ND)	ND	.0022	.00022
GAMMA-CHLORDANE	(ND)	ND	.0022	.00022
ALPHA-CHLORDANE	(ND)	ND	.0022	.00022
ENDOSULFAN I	(ND)	ND	.0044	.0011
4,4'-DDE	(ND)	ND	.0044	.0011
DIELDRIN	(ND)	ND	.0044	.00055
ENDRIN	(ND)	ND	.0033	.0011
4,4'-DDD	(ND)	ND	.0044	.0011
ENDOSULFAN II	(ND)	ND	.0044	.00055
4,4'-DDT	(ND)	ND	.0044	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0044	.00055
ENDOSULFAN SULFATE	(ND)	ND	.0044	.00055
ENDRIN KETONE	(ND)	ND	.0033	.0011
METHOXYPHENYL	(ND)	ND	.022	.0044
TOXAPHENE	(ND)	ND	.11	.0088
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(87)	79	35-135	
DECACHLOROBIPHENYL	(99)	93	25-143	

RL : Reporting limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column

SW3550B/8081A  
PESTICIDES

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3093 Date Analyzed: 09/24/02 22:30  
 Lab Samp ID: 1146-04 Dilution Factor: 1  
 Lab File ID: SI24020A Matrix : SOIL  
 Ext Btch ID: CP1038S % Moisture : 8.2  
 Calib. Ref.: SI24003A Instrument ID : GCT008

=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(mg/kg)	ND		
ALPHA-BHC	(ND)	ND	.0022	.00022
GAMMA-BHC (LINDANE)	(ND)	ND	.0022	.00022
BETA-BHC	(ND)	ND	.0022	.00022
HEPTACHLOR	(ND)	ND	.0022	.0011
DELTA-BHC	(ND)	ND	.0022	.00022
ALDRIN	(ND)	ND	.0022	.00054
HEPTACHLOR EPOXIDE	(ND)	ND	.0022	.00022
GAMMA-CHLORDANE	(ND)	ND	.0022	.00022
ALPHA-CHLORDANE	(ND)	ND	.0022	.00022
ENDOSULFAN I	(ND)	ND	.0044	.0011
4,4'-DDE	(ND)	ND	.0044	.0011
DIELDRIN	(ND)	ND	.0044	.00054
ENDRIN	(ND)	ND	.0033	.0011
4,4'-DDD	(ND)	ND	.0044	.0011
ENDOSULFAN II	(ND)	ND	.0044	.00054
4,4'-DDT	(ND)	ND	.0044	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0044	.00054
ENDOSULFAN SULFATE	(ND)	ND	.0044	.00054
ENDRIN KETONE	(ND)	ND	.0033	.0011
METHOXYPYRROLE	(ND)	ND	.022	.0044
TOXAPHENE	(ND)	ND	.11	.0087

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(92) 84	35-135
DECACHLOROBIPHENYL	(99) 93	25-143

RL : Reporting limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column

SW3550B/8081A  
PESTICIDES

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 02I146 Date Extracted: 09/24/02 16:30
 Sample ID: 818655-B3094 Date Analyzed: 09/24/02 22:55
 Lab Samp ID: I146-05 Dilution Factor: 1
 Lab File ID: SI24021A Matrix : SOIL
 Ext Btch ID: CPI038S % Moisture : 6.2
 Calib. Ref.: SI24003A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL	MDL
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
ALPHA-BHC	(ND)	ND	.0021	.00021
GAMMA-BHC (LINDANE)	(ND)	ND	.0021	.00021
BETA-BHC	(ND)	ND	.0021	.00021
HEPTACHLOR	(ND)	ND	.0021	.0011
DELTA-BHC	(ND)	ND	.0021	.00021
ALDRIN	(ND)	ND	.0021	.00053
HEPTACHLOR EPOXIDE	(ND)	ND	.0021	.00021
GAMMA-CHLORDANE	(ND)	ND	.0021	.00021
ALPHA-CHLORDANE	(ND)	ND	.0021	.00021
ENDOSULFAN I	(ND)	ND	.0043	.0011
4,4'-DDE	(ND)	ND	.0043	.0011
DIELDRIN	(ND)	ND	.0043	.00053
ENDRIN	(ND)	ND	.0032	.0011
4,4'-DDD	(ND)	ND	.0043	.0011
ENDOSULFAN II	(ND)	ND	.0043	.00053
4,4'-DDT	(ND)	ND	.0043	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0043	.00053
ENDOSULFAN SULFATE	(ND)	ND	.0043	.00053
ENDRIN KETONE	(ND)	ND	.0032	.0011
METHOXYPHORON	(ND)	ND	.021	.0043
TOXAPHENE	(ND)	ND	.11	.0085
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(94) 87		35-135	
DECACHLOROBIPHENYL	(100) 93		25-143	

RL : Reporting limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column

5101

SW3550B/8081A  
PESTICIDES

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 02I146 Date Extracted: 09/24/02 16:30
 Sample ID: 818655-B3095 Date Analyzed: 09/24/02 23:20
 Lab Samp ID: I146-06 Dilution Factor: 1
 Lab File ID: SI24022A Matrix : SOIL
 Ext Btch ID: CPI038S % Moisture : 10.6
 Calib. Ref.: SI24003A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL	MDL
	(mg/kg)		(mg/kg)	(mg/kg)
ALPHA-BHC	(ND)	ND	.0022	.00022
GAMMA-BHC (LINDANE)	(ND)	ND	.0022	.00022
BETA-BHC	(ND)	ND	.0022	.00022
HEPTACHLOR	(ND)	ND	.0022	.0011
DELTA-BHC	(ND)	ND	.0022	.00022
ALDRIN	(ND)	ND	.0022	.00056
HEPTACHLOR EPOXIDE	(ND)	ND	.0022	.00022
GAMMA-CHLORDANE	(ND)	ND	.0022	.00022
ALPHA-CHLORDANE	(ND)	ND	.0022	.00022
ENDOSULFAN I	(ND)	ND	.0045	.0011
4,4'-DDE	(ND)	ND	.0045	.0011
DIELDRIN	(ND)	ND	.0045	.00056
ENDRIN	(ND)	ND	.0034	.0011
4,4'-DDD	(ND)	ND	.0045	.0011
ENDOSULFAN II	(ND)	ND	.0045	.00056
4,4'-DDT	(ND)	ND	.0045	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0045	.00056
ENDOSULFAN SULFATE	(ND)	ND	.0045	.00056
ENDRIN KETONE	(ND)	ND	.0034	.0011
METHOXYPHORON	(ND)	ND	.022	.0045
TOXAPHENE	(ND)	ND	.11	.0089
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(89)	83	35-135	
DECACHLOROBIPHENYL	(99)	92	25-143	

RL : Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

SW3550B/8081A  
PESTICIDES

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No. : 02I146	Date Extracted: 09/24/02 16:30
Sample ID: 818655-B3096	Date Analyzed: 09/24/02 23:46
Lab Samp ID: I146-07	Dilution Factor: 1
Lab File ID: S124023A	Matrix : SOIL
Ext Btch ID: CPI038S	% Moisture : 13.0
Calib. Ref.: S124003A	Instrument ID : GCT008

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
ALPHA-BHC	(ND)	ND	.0023	.00023
GAMMA-BHC (LINDANE)	(ND)	ND	.0023	.00023
BETA-BHC	(ND)	ND	.0023	.00023
HEPTACHLOR	(ND)	ND	.0023	.0011
DELTA-BHC	(ND)	ND	.0023	.00023
ALDRIN	(ND)	ND	.0023	.00057
HEPTACHLOR EPOXIDE	(ND)	ND	.0023	.00023
GAMMA-CHLORDANE	(ND)	ND	.0023	.00023
ALPHA-CHLORDANE	(ND)	ND	.0023	.00023
ENDOSULFAN I	(ND)	ND	.0046	.0011
4,4'-DDE	(ND)	ND	.0046	.0011
DIELDRIN	(ND)	ND	.0046	.00057
ENDRIN	(ND)	ND	.0034	.0011
4,4'-DDD	(ND)	ND	.0046	.0011
ENDOSULFAN II	(ND)	ND	.0046	.00057
4,4'-DDT	(ND)	ND	.0046	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0046	.00057
ENDOSULFAN SULFATE	(ND)	ND	.0046	.00057
ENDRIN KETONE	(ND)	ND	.0034	.0011
METHOXYPHOR	(ND)	ND	.023	.0046
TOXAPHENE	(ND)	ND	.11	.0092
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(97)	89	35-135	
DECACHLOROBIPHENYL	(98)	92	25-143	

RL : Reporting Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550B/8081A  
PESTICIDES

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
Batch No. : 021146 Date Extracted: 09/24/02 16:30
Sample ID: 818655-B3100 Date Analyzed: 09/25/02 00:11
Lab Samp ID: I146-11 Dilution Factor: 1
Lab File ID: SI24024A Matrix : SOIL
Ext Btch ID: CPI038S % Moisture : 6.3
Calib. Ref.: SI24003A Instrument ID : GCT008
=====
```

PARAMETERS	RESULTS		RL	MDL
	(mg/kg)		(mg/kg)	(mg/kg)
ALPHA-BHC	(ND)	ND	.0021	.00021
GAMMA-BHC (LINDANE)	(ND)	ND	.0021	.00021
BETA-BHC	(ND)	ND	.0021	.00021
HEPTACHLOR	(ND)	ND	.0021	.0011
DELTA-BHC	(ND)	ND	.0021	.00021
ALDRIN	(ND)	ND	.0021	.00053
HEPTACHLOR EPOXIDE	(ND)	ND	.0021	.00021
GAMMA-CHLORDANE	(ND)	ND	.0021	.00021
ALPHA-CHLORDANE	(ND)	ND	.0021	.00021
ENDOSULFAN I	(ND)	ND	.0043	.0011
4,4'-DDE	(ND)	ND	.0043	.0011
DIELDRIN	(ND)	ND	.0043	.00053
ENDRIN	(ND)	ND	.0032	.0011
4,4'-DDD	(ND)	ND	.0043	.0011
ENDOSULFAN II	(ND)	ND	.0043	.00053
4,4'-DDT	(ND)	ND	.0043	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0043	.00053
ENDOSULFAN SULFATE	(ND)	ND	.0043	.00053
ENDRIN KETONE	(ND)	ND	.0032	.0011
METHOXYPHOR	(ND)	ND	.021	.0043
TOXAPHENE	(ND)	ND	.11	.0085
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(97)	89		35-135
DECACHLOROBIPHENYL	(95)	89		25-143

RL : Reporting limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550B/8081A  
PESTICIDES

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
Batch No. : 02I146 Date Extracted: 09/24/02 16:30
Sample ID: 818655-B3101 Date Analyzed: 09/25/02 00:36
Lab Samp ID: I146-12 Dilution Factor: 1
Lab File ID: SI24025A Matrix : SOIL
Ext Btch ID: CP1038S % Moisture : 7.3
Calib. Ref.: SI24003A Instrument ID : GCT008
=====
```

PARAMETERS	RESULTS		RL	MDL
	(mg/kg)		(mg/kg)	(mg/kg)
ALPHA-BHC	(ND)	ND	.0022	.00022
GAMMA-BHC (LINDANE)	(ND)	ND	.0022	.00022
BETA-BHC	(ND)	ND	.0022	.00022
HEPTACHLOR	(ND)	ND	.0022	.0011
DELTA-BHC	(ND)	ND	.0022	.00022
ALDRIN	(ND)	ND	.0022	.00054
HEPTACHLOR EPOXIDE	(ND)	ND	.0022	.00022
GAMMA-CHLORDANE	(ND)	ND	.0022	.00022
ALPHA-CHLORDANE	(ND)	ND	.0022	.00022
ENDOSULFAN I	(ND)	ND	.0043	.0011
4,4'-DDE	(ND)	ND	.0043	.0011
DIELDRIN	(ND)	ND	.0043	.00054
ENDRIN	(ND)	ND	.0032	.0011
4,4'-DDD	(ND)	ND	.0043	.0011
ENDOSULFAN II	(ND)	ND	.0043	.00054
4,4'-DDT	(ND)	ND	.0043	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0043	.00054
ENDOSULFAN SULFATE	(ND)	ND	.0043	.00054
ENDRIN KETONE	(ND)	ND	.0032	.0011
METHOXYPYCHLOR	(ND)	ND	.022	.0043
TOXAPHENE	(ND)	ND	.11	.0086

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(82)   74	35-135
DECACHLOROBIPHENYL	(94)   88	25-143

RL : Reporting limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column

5105

SW3520C/8081A  
PESTICIDES

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No. : 02I146	Date Extracted: 09/24/02 12:00
Sample ID: 818655-B3102	Date Analyzed: 09/24/02 19:07
Lab Samp ID: I146-13	Dilution Factor: .97
Lab File ID: SI24012A	Matrix : WATER
Ext Btch ID: CPI037W	% Moisture : NA
Calib. Ref.: SI24003A	Instrument ID : GCT008

PARAMETERS	RESULTS		RL	MDL
	(ug/L)	(ug/L)	(ug/L)	(ug/L)
ALPHA-BHC	(ND)	ND	.097	.0097
GAMMA-BHC (LINDANE)	(ND)	ND	.097	.0097
BETA-BHC	(ND)	ND	.097	.0097
HEPTACHLOR	(ND)	.046J	.097	.0097
DELTA-BHC	(ND)	ND	.097	.0097
ALDRIN	(ND)	ND	.097	.0097
HEPTACHLOR EPOXIDE	(ND)	ND	.097	.0097
GAMMA-CHLORDANE	(ND)	ND	.097	.0097
ALPHA-CHLORDANE	(ND)	ND	.097	.0097
ENDOSULFAN I	.38	(ND)	.097	.029
4,4'-DDE	(ND)	.43	.19	.029
DIELDRIN	(ND)	ND	.19	.097
ENDRIN	(ND)	ND	.097	.0097
4,4'-DDD	(ND)	ND	.19	.029
ENDOSULFAN II	(ND)	ND	.19	.0097
4,4'-DDT	(ND)	ND	.19	.019
ENDRIN ALDEHYDE	(ND)	ND	.19	.0097
ENDOSULFAN SULFATE	(ND)	ND	.19	.0097
ENDRIN KETONE	(ND)	ND	.097	.0097
METHOXYPHOR	(ND)	ND	.97	.097
TOXAPHENE	(ND)		2.9	1.2
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(105)	93	45-125	
DECACHLOROBIPHENYL	110	(108)	34-133	

RL : Reporting limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3091 Date Analyzed: 09/24/02 21:39  
 Lab Samp ID: I146-02 Dilution Factor: 1  
 Lab File ID: SI24018A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 8.5  
 Calib. Ref.: SI24006A Instrument ID : GCT008  
=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.055	.018
PCB-1221	(ND)	ND	.055	.018
PCB-1232	(ND)	ND	.055	.018
PCB-1242	(ND)	ND	.055	.018
PCB-1248	(ND)	ND	.055	.018
PCB-1254	(ND)	ND	.055	.018
PCB-1260	(ND)	ND	.055	.018

SURROGATE PARAMETERS	% RECOVERY		QC LIMIT
	(93)	87	
TETRACHLORO-M-XYLENE	(95)	88	35-135
DECACHLOROBIPHENYL			25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

() included the reported column

\* Out side of QC Limit

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
Batch No.: 02I146 Date Extracted: 09/24/02 16:30
Sample ID: 818655-B3092 Date Analyzed: 09/24/02 22:05
Lab Samp ID: I146-03 Dilution Factor: 1
Lab File ID: SI24019A Matrix : SOIL
Ext Btch ID: CP1038S % Moisture : 9.2
Calib. Ref.: SI24006A Instrument ID : GCT008
=====
```

PARAMETERS	RESULTS	RL	MDL
	(mg/kg)	(mg/kg)	(mg/kg)
PCB-1016	(ND) ND	.055	.018 .018
PCB-1221	(ND) ND	.055	.018 .018
PCB-1232	(ND) ND	.055	.018 .018
PCB-1242	(ND) ND	.055	.018 .018
PCB-1248	(ND) ND	.055	.018 .018
PCB-1254	(ND) ND	.055	.018 .018
PCB-1260	(ND) ND	.055	.018 .018

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(85) 80	35-135
DECACHLOROBIPHENYL	(97) 90	25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No. : 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3093 Date Analyzed: 09/24/02 22:30  
 Lab Samp ID: I146-04 Dilution Factor: 1  
 Lab File ID: SI24020A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 8.2  
 Calib. Ref.: SI24006A Instrument ID : GCT008  
=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.054	.018
PCB-1221	(ND)	ND	.054	.018
PCB-1232	(ND)	ND	.054	.018
PCB-1242	(ND)	ND	.054	.018
PCB-1248	(ND)	ND	.054	.018
PCB-1254	(ND)	ND	.054	.018
PCB-1260	(ND)	ND	.054	.018

SURROGATE PARAMETERS	% RECOVERY		QC LIMIT
	( )	( )	
TETRACHLORO-M-XYLENE	(89)	85	35-135
DECACHLOROBIPHENYL	(97)	90	25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3094 Date Analyzed: 09/24/02 22:55  
 Lab Samp ID: I146-05 Dilution Factor: 1  
 Lab File ID: SI24021A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 6.2  
 Calib. Ref.: SI24006A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.053	.018 .018
PCB-1221	(ND) ND	.053	.018 .018
PCB-1232	(ND) ND	.053	.018 .018
PCB-1242	(ND) ND	.053	.018 .018
PCB-1248	(ND) ND	.053	.018 .018
PCB-1254	(ND) ND	.053	.018 .018
PCB-1260	(ND) ND	.053	.018 .018

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(90) 87	35-135
DECACHLOROBIPHENYL	(98) 91	25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No. : 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3095 Date Analyzed: 09/24/02 23:20  
 Lab Samp ID: I146-06 Dilution Factor: 1  
 Lab File ID: SI24022A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 10.6  
 Calib. Ref.: SI24006A Instrument ID : GCT008  
=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.056	.019   .019
PCB-1221	(ND)	ND	.056	.019   .019
PCB-1232	(ND)	ND	.056	.019   .019
PCB-1242	(ND)	ND	.056	.019   .019
PCB-1248	(ND)	ND	.056	.019   .019
PCB-1254	(ND)	ND	.056	.019   .019
PCB-1260	(ND)	ND	.056	.019   .019
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(86)	83	35-135	
DECACHLOROBIPHENYL	(97)	90	25-143	

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3096 Date Analyzed: 09/24/02 23:46  
 Lab Samp ID: I146-07 Dilution Factor: 1  
 Lab File ID: SI24023A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 13.0  
 Calib. Ref.: SI24006A Instrument ID : GCT008  
=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.057	.019   .019
PCB-1221	(ND)	ND	.057	.019   .019
PCB-1232	(ND)	ND	.057	.019   .019
PCB-1242	(ND)	ND	.057	.019   .019
PCB-1248	(ND)	ND	.057	.019   .019
PCB-1254	(ND)	ND	.057	.019   .019
PCB-1260	(ND)	ND	.057	.019   .019
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(94)	89	35-135	
DECACHLOROBIPHENYL	(97)	89	25-143	

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW35508/8082

PCBs

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 021146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3100 Date Analyzed: 09/25/02 00:11  
 Lab Samp ID: I146-11 Dilution Factor: 1  
 Lab File ID: SI24024A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 6.3  
 Calib. Ref.: SI24006A Instrument ID : GCT008  
=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.053	.018
PCB-1221	(ND)	ND	.053	.018
PCB-1232	(ND)	ND	.053	.018
PCB-1242	(ND)	ND	.053	.018
PCB-1248	(ND)	ND	.053	.018
PCB-1254	(ND)	ND	.053	.018
PCB-1260	(ND)	ND	.053	.018

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(94) 90	35-135
DECACHLOROBIPHENYL	(94) 87	25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

() included the reported column

\* Out side of QC Limit

5160

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 021146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3101 Date Analyzed: 09/25/02 00:36  
 Lab Samp ID: I146-12 Dilution Factor: 1  
 Lab File ID: SI24025A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 7.3  
 Calib. Ref.: SI24006A Instrument ID : GCT008  
=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.054	.018   .018
PCB-1221	(ND)	ND	.054	.018   .018
PCB-1232	(ND)	ND	.054	.018   .018
PCB-1242	(ND)	ND	.054	.018   .018
PCB-1248	(ND)	ND	.054	.018   .018
PCB-1254	(ND)	ND	.054	.018   .018
PCB-1260	(ND)	ND	.054	.018   .018

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(79)   75	35-135
DECACHLOROBIPHENYL	(92)   86	25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No. : 021146 Date Extracted: 09/24/02 12:00  
 Sample ID: 818655-B3102 Date Analyzed: 09/24/02 19:07  
 Lab Samp ID: I146-13 Dilution Factor: .97  
 Lab File ID: S124012A Matrix : WATER  
 Ext Btch ID: CP1037W % Moisture : NA  
 Calib. Ref.: S124006A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL (ug/L)	MDL (ug/L)
	(ND)	ND		
PCB-1016	(ND)	ND	.97	.24
PCB-1221	(ND)	ND	.97	.24
PCB-1232	(ND)	ND	.97	.24
PCB-1242	(ND)	ND	.97	.24
PCB-1248	(ND)	ND	.97	.24
PCB-1254	(ND)	ND	.97	.24
PCB-1260	(ND)	ND	.97	.24

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(96)   94	45-125
DECACHLOROBIPHENYL	(109)   105	34-133

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

METHOD 3050B/6010B  
METALS BY ICP

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
SDG NO.: 02I146 Date Extracted: 09/23/02 16:55
Sample ID: 818655-B3091 Date Analyzed: 09/25/02 22:35
Lab Samp ID: 1146-02 Dilution Factor: 1
Lab File ID: 173I022033 Matrix : SOIL
Ext Btch ID: IPI052S % Moisture : 8.5
Calib. Ref.: 173I022030 Instrument ID : EMAXT173
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	13700	54.6	4.9
Antimony	2.46J	5.46	2.3
Arsenic	2.38	1.09	.23
Barium	88.6	1.09	.136
Beryllium	ND	.219	.129
Cadmium	.538J	.546	.396
Calcium	3940	109	7.43
Chromium	14.4	2.19	.671
Cobalt	4.47	1.09	.755
Copper	8.69	2.19	.516
Iron	14100	21.9	1.67
Lead	2.76	1.09	.19
Magnesium	5180	109	8.74
Manganese	249	2.19	.205
Molybdenum	.902J	5.46	.807
Nickel	11.2	2.19	.601
Potassium	2870	109	78.2
Selenium	1.97	1.09	.311
Silver	ND	2.19	.686
Sodium	181	109	7.66
Thallium	.767J	1.09	.333
Vanadium	37.1	2.19	.479
Zinc	41	1.09	.315

RL: Reporting Limit

7003

METHOD 3050B/6010B  
METALS BY ICP

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 SDG NO. : 02I146 Date Extracted: 09/23/02 16:55
 Sample ID: 818655-B3092 Date Analyzed: 09/25/02 22:42
 Lab Samp ID: I146-03 Dilution Factor: 1
 Lab File ID: I73I022034 Matrix : SOIL
 Ext Btch ID: IPI052S % Moisture : 9.2
 Calib. Ref.: I73I022030 Instrument ID : EMAXTI73
 =====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	12100	55.1	4.94
Antimony	ND	5.51	2.32
Arsenic	2.55	1.1	.231
Barium	99.5	1.1	.137
Beryllium	ND	.22	.13
Cadmium	ND	.551	.399
Calcium	3820	110	7.48
Chromium	11.7	2.2	.676
Cobalt	4.1	1.1	.761
Copper	6.7	2.2	.52
Iron	12800	22	1.68
Lead	2.78	1.1	.192
Magnesium	5080	110	8.8
Manganese	179	2.2	.207
Molybdenum	ND	5.51	.813
Nickel	8.75	2.2	.606
Potassium	1730	110	78.8
Selenium	2.15	1.1	.314
Silver	ND	2.2	.692
Sodium	199	110	7.72
Thallium	.34J	1.1	.336
Vanadium	34	2.2	.482
Zinc	35.6	1.1	.317

RL: Reporting Limit

7004

METHOD 3050B/6010B  
METALS BY ICP

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 SDG NO. : 021146 Date Extracted: 09/23/02 16:55  
 Sample ID: 818655-B3093 Date Analyzed: 09/25/02 22:49  
 Lab Samp ID: I146-04 Dilution Factor: 1  
 Lab File ID: I73I022035 Matrix : SOIL  
 Ext Btch ID: IPI052S % Moisture : 8.2  
 Calib. Ref.: I73I022030 Instrument ID : EMAXTI73  
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	8070	54.5	4.88
Antimony	ND	5.45	2.29
Arsenic	1.77	1.09	.229
Barium	70.7	1.09	.135
Beryllium	ND	.218	.129
Cadmium	.436	.545	.394
Calcium	2710	109	7.4
Chromium	9.03	2.18	.669
Cobalt	2.81	1.09	.753
Copper	5.85	2.18	.514
Iron	9320	21.8	1.66
Lead	2.26	1.09	.19
Magnesium	3310	109	8.71
Manganese	160	2.18	.205
Molybdenum	ND	5.45	.804
Nickel	7.48	2.18	.599
Potassium	1630	109	78
Selenium	1.36	1.09	.31
Silver	ND	2.18	.684
Sodium	92.7	109	7.63
Thallium	ND	1.09	.332
Vanadium	24.8	2.18	.477
Zinc	30.5	1.09	.314

RL: Reporting Limit

7005

METHOD 3050B/6010B  
METALS BY ICP

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
SDG NO.    : 02I146            Date Extracted: 09/23/02 16:55
Sample ID: 818655-B3094       Date Analyzed: 09/25/02 22:56
Lab Samp ID: I146-05         Dilution Factor: 1
Lab File ID: I73I022036       Matrix        : SOIL
Ext Btch ID: IPI052S         % Moisture    : 6.2
Calib. Ref.: I73I022030       Instrument ID: EMAXT173
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	6500	53.3	4.78
Antimony	ND	5.33	2.24
Arsenic	1.64	1.07	.224
Barium	65.1	1.07	.132
Beryllium	ND	.213	.126
Cadmium	ND	.533	.386
Calcium	2790	107	7.25
Chromium	7.69	2.13	.655
Cobalt	2.65	1.07	.737
Copper	5.07	2.13	.503
Iron	8720	21.3	1.63
Lead	2.21	1.07	.186
Magnesium	3180	107	8.52
Manganese	147	2.13	.2
Molybdenum	ND	5.33	.787
Nickel	6.93	2.13	.586
Potassium	1320	107	76.3
Selenium	1.37	1.07	.304
Silver	ND	2.13	.67
Sodium	112	107	7.47
Thallium	ND	1.07	.325
Vanadium	21.8	2.13	.467
Zinc	28.3	1.07	.307

RL: Reporting Limit

7006

METHOD 3050B/6010B  
METALS BY ICP

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
SDG NO.     : 02I146           Date Extracted: 09/23/02 16:55
Sample ID: 818655-B3095       Date Analyzed: 09/25/02 23:03
Lab Samp ID: I146-06          Dilution Factor: 1
Lab File ID: I73I022037       Matrix        : SOIL
Ext Btch ID: IPI052S          % Moisture    : 10.6
Calib. Ref.: I73I022030       Instrument ID: EMAXTI73
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	13900	55.9	5.01
Antimony	ND	5.59	2.35
Arsenic	2.87	1.12	.235
Barium	108	1.12	.139
Beryllium	ND	.224	.132
Cadmium	.614	.559	.405
Calcium	8710	112	7.6
Chromium	13.7	2.24	.687
Cobalt	4.25	1.12	.773
Copper	8.51	2.24	.528
Iron	14100	22.4	1.71
Lead	3.02	1.12	.195
Magnesium	6090	112	8.94
Manganese	209	2.24	.21
Molybdenum	ND	5.59	.826
Nickel	10.5	2.24	.615
Potassium	2420	112	80
Selenium	2.18	1.12	.319
Silver	ND	2.24	.702
Sodium	165	112	7.84
Thallium	ND	1.12	.341
Vanadium	37.9	2.24	.49
Zinc	42.7	1.12	.322

RL: Reporting Limit

7007

METHOD 3050B/6010B  
METALS BY ICP

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
SDG NO.     : 021146           Date Extracted: 09/23/02 16:55
Sample ID: 818655-B3096       Date Analyzed: 09/25/02 23:10
Lab Samp ID: I146-07          Dilution Factor: 1
Lab File ID: I73I022038       Matrix        : SOIL
Ext Btch ID: IPI052S          % Moisture    : 13.0
Calib. Ref.: I73I022030       Instrument ID : EMAXT173
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	12000	57.5	5.15
Antimony	ND	5.75	2.42
Arsenic	3.23	1.15	.241
Barium	103	1.15	.143
Beryllium	ND	.23	.136
Cadmium	.8	.575	.416
Calcium	8390	115	7.81
Chromium	12.3	2.3	.706
Cobalt	5.08	1.15	.794
Copper	8.01	2.3	.543
Iron	13600	23	1.75
Lead	3.06	1.15	.2
Magnesium	5800	115	9.19
Manganese	227	2.3	.216
Molybdenum	.848J	5.75	.848
Nickel	10.5	2.3	.632
Potassium	2300	115	82.3
Selenium	1.81	1.15	.328
Silver	ND	2.3	.722
Sodium	128	115	8.06
Thallium	ND	1.15	.351
Vanadium	36.3	2.3	.503
Zinc	42.8	1.15	.331

RL: Reporting Limit

7008

METHOD 3050B/6010B  
METALS BY ICP

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
SDG NO. : 021146 Date Extracted: 09/23/02 16:55
Sample ID: 818655-B3100 Date Analyzed: 09/25/02 23:17
Lab Samp ID: I146-11 Dilution Factor: 1
Lab File ID: I731022039 Matrix : SOIL
Ext Btch ID: IPI052S % Moisture : 6.3
Calib. Ref.: I731022030 Instrument ID : EMAXTI73
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	6090	53.4	4.78
Antimony	ND	5.34	2.24
Arsenic	1.24	1.07	.224
Barium	90.4	1.07	.132
Beryllium	ND	.213	.126
Cadmium	ND	.534	.386
Calcium	2370	107	7.25
Chromium	6.43	2.13	.655
Cobalt	2.85	1.07	.737
Copper	4.29	2.13	.504
Iron	8600	21.3	1.63
Lead	1.68	1.07	.186
Magnesium	3250	107	8.53
Manganese	164	2.13	.201
Molybdenum	ND	5.34	.788
Nickel	4.23	2.13	.587
Potassium	2240	107	76.4
Selenium	1.64	1.07	.304
Silver	ND	2.13	.67
Sodium	116	107	7.48
Thallium	ND	1.07	.326
Vanadium	20.3	2.13	.467
Zinc	26.2	1.07	.307

RL: Reporting Limit

7009

METHOD 3050B/6010B  
METALS BY ICP

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 SDG NO.: 02I146 Date Extracted: 09/23/02 16:55  
 Sample ID: 818655-B3101 Date Analyzed: 09/25/02 23:24  
 Lab Samp ID: I146-12 Dilution Factor: 1  
 Lab File ID: I731022040 Matrix : SOIL  
 Ext Btch ID: IPI052S % Moisture : 7.3  
 Calib. Ref.: I731022030 Instrument ID : EMAXI73

=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	8640	53.9	4.83
Antimony	ND	5.39	2.27
Arsenic	1.94	1.08	.227
Barium	120	1.08	.134
Beryllium	ND	.216	.127
Cadmium	ND	.539	.391
Calcium	5720	108	7.33
Chromium	8.67	2.16	.662
Cobalt	3.98	1.08	.745
Copper	5.81	2.16	.509
Iron	12000	21.6	1.65
Lead	1.54	1.08	.188
Magnesium	5040	108	8.62
Manganese	210	2.16	.203
Molybdenum	ND	5.39	.796
Nickel	5.32	2.16	.593
Potassium	3140	108	77.2
Selenium	1.92	1.08	.307
Silver	ND	2.16	.677
Sodium	141	108	7.56
Thallium	ND	1.08	.329
Vanadium	29	2.16	.472
Zinc	35.1	1.08	.311

RL: Reporting Limit

7010

METHOD 3010A/6010B  
METALS BY ICP

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
SDG NO.    : 02I146            Date Extracted: 09/23/02 15:45
Sample ID: 818655-B3102        Date Analyzed: 09/25/02 21:31
Lab Samp ID: 1146-13          Dilution Factor: 1
Lab File ID: I73I022024       Matrix      : WATER
Ext Btch ID: IPI051W          % Moisture   : NA
Calib. Ref.: I73I022018        Instrument ID : EMAXTI73
=====
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	500	61
Antimony	ND	500	40
Arsenic	ND	5	4
Barium	ND	100	2
Beryllium	ND	10	1.0
Cadmium	ND	5	2
Calcium	88.2J	1000	32
Chromium	ND	50	6
Cobalt	ND	50	11
Copper	ND	50	5
Iron	ND	1000	25
Lead	ND	5	2
Magnesium	ND	1000	54
Manganese	ND	20	3
Molybdenum	ND	100	7
Nickel	ND	150	10
Potassium	ND	5000	750
Selenium	ND	5	5
Silver	ND	50	11
Sodium	380J	1000	70
Thallium	ND	10	6
Vanadium	ND	100	5
Zinc	ND	20	5

RL: Reporting Limit

7011

METHOD 7470A  
MERCURY BY COLD VAPOR

Client : SHAW E&I  
Project : CTO 0024, EL TORO  
Batch No. : 021146

Matrix : WATER  
Instrument ID : T1047

EMAX	SAMPLE ID	RESULTS (ug/L)	RL	MDL	Analysis (ug/L)	Extraction DATETIME	L FID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
NBLK1W	HGI045WB	ND	1	NA	.2	.1	09/24/0210:26	09/23/0217:35	M741022011	M741022009	HGI045W
LCS1W	HGI045WL	4.77	1	NA	.2	.1	09/24/0210:28	09/23/0217:35	M741022012	M741022009	HGI045W
LCD1W	HGI045WC	4.86	1	NA	.2	.1	09/24/0210:30	09/23/0217:35	M741022013	M741022009	HGI045W
818655-B3102	I146-13	.113J	1	NA	.2	.1	09/24/0210:47	09/23/0217:35	M741022020	M741022009	HGI045W
											09/19/02

RL: Reporting Limit

7029

**METHOD 7471A**  
**MERCURY BY COLD VAPOR**

Client : SHAW E&I  
 Project : CTO 0024, EL TORO  
 Batch No. : 021146

Matrix : SOIL  
 Instrument ID : T1047

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/kg)		RL	MDL NOIST (mg/kg)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
		DLF	NOIST (mg/kg)									
MBLK1S	HG1044SB	ND	1	NA	.1	09/23/0216:36	09/23/0214:50	M741021048	M741021046	HG1044S	09/23/02	09/23/02
LCS1S	HG1044SL	.892	1	NA	.1	09/23/0216:38	09/23/0214:50	M741021049	M741021046	HG1044S	NA	09/23/02
LCD1S	HG1044SC	.89	1	NA	.1	09/23/0216:41	09/23/0214:50	M741021050	M741021046	HG1044S	NA	09/23/02
818655-B3091DL	I146-02T	ND	5	8.5	.546	09/23/0216:43	09/23/0214:50	M741021051	M741021046	HG1044S	09/19/02	09/19/02
818655-B3091	I146-02	ND	1	8.5	.109	09/23/0216:47	09/23/0214:50	M741021052	M741021046	HG1044S	09/19/02	09/19/02
818655-B3091AS	I146-02A	.348	1	8.5	.109	09/23/0216:49	09/23/0214:50	M741021053	M741021046	HG1044S	09/19/02	09/19/02
818655-B3092	I146-03	ND	1	9.2	.11	09/23/0216:51	09/23/0214:50	M741021054	M741021046	HG1044S	09/19/02	09/19/02
818655-B3093	I146-04	ND	1	8.2	.109	09/23/0216:55	09/23/0214:50	M741021055	M741021046	HG1044S	09/19/02	09/19/02
818655-B3094	I146-05	ND	1	6.2	.107	09/23/0216:57	09/23/0214:50	M741021056	M741021046	HG1044S	09/19/02	09/19/02
818655-B3095	I146-06	ND	1	10.6	.112	09/23/0216:59	09/23/0214:50	M741021060	M741021058	HG1044S	09/19/02	09/19/02
818655-B3096	I146-07	ND	1	13.0	.115	09/23/0217:03	09/23/0214:50	M741021061	M741021058	HG1044S	09/19/02	09/19/02
818655-B3100	I146-11	ND	1	6.3	.107	09/23/0217:11	09/23/0214:50	M741021062	M741021058	HG1044S	09/19/02	09/19/02
818655-B3101	I146-12	ND	1	7.3	.108	09/23/0217:14	09/23/0214:50	M741021063	M741021058	HG1044S	09/19/02	09/19/02

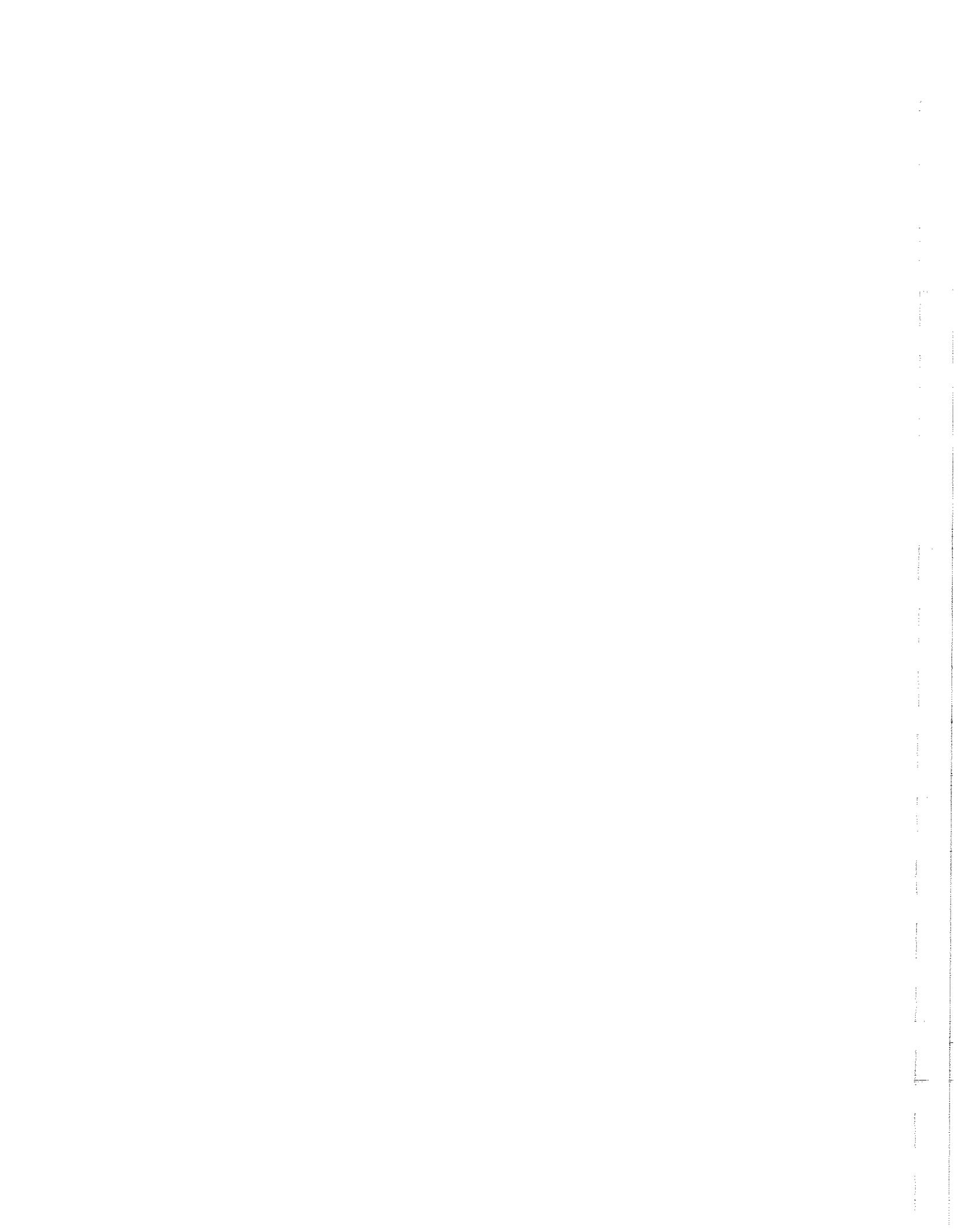
RL: Reporting Limit

7030



## **APPENDIX H**

## **LDC REPORT**



**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24

**Collection Date:** September 19, 2002

**LDC Report Date:** October 8, 2002

**Matrix:** Soil/Water

**Parameters:** Volatiles

**Validation Level:** EPA Level III

**Laboratory:** EMAX Laboratories, Inc.

**Sample Delivery Group (SDG):** 02I146

**Sample Identification**

818655-B3090

818655-B3091

818655-B3092

818655-B3093

818655-B3094

818655-B3095

818655-B3096

818655-B3100

818655-B3101

818655-B3102

## Introduction

This data review covers 8 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U      Indicates the compound or analyte was analyzed for but not detected at or above the stated limit
- J      Indicates an estimated value
- R      Quality control indicates the data is not usable.
- N      Presumptive evidence of presence of the constituent
- UJ     Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value
- A      Indicates the finding is based upon technical validation criteria
- P      Indicates the finding is related to a protocol/contractual deviation.
- None    Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodices were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria

## **II. GC/MS Instrument Performance Check**

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

## **III. Initial Calibration**

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs)

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

All of the continuing calibration RRF values were within method and validation criteria.

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
VOO6157Q	9/22/02	Methylene chloride	2.3 ug/L	All water samples in SDG 02I146

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
818655-B3090	Methylene chloride	2.1 ug/L	5.0 ug/L

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits

## **IX. Regional Quality Assurance and Quality Control**

Not applicable.

## **X. Internal Standards**

All internal standard areas and retention times were within QC limits

## **XI. Target Compound Identifications**

Raw data were not reviewed for this SDG.

## **XII. Compound Quantitation and CRQLs**

Raw data were not reviewed for this SDG

## **XIII. Tentatively Identified Compounds (TICs)**

Raw data were not reviewed for this SDG

## **XIV. System Performance**

Raw data were not reviewed for this SDG

## **XV. Overall Assessment of Data**

Data flags have been summarized at the end of the report.

## **XVI. Field Duplicates**

No field duplicates were identified in this SDG

## **XVII. Field Blanks**

Sample 818655-B3090 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Compound	Concentration (ug/L)
818655-B3090	Methylene chloride	21

Sample 818655-B3102 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

**MCAS EI Toro, CTO 24**  
**Volatiles - Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

**MCAS EI Toro, CTO 24**  
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 02I146**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02I146	818655-B3090	Methylene chloride	5U ug/L	A

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24

**Collection Date:** September 19, 2002

**LDC Report Date:** October 8, 2002

**Matrix:** Soil

**Parameters:** Semivolatiles

**Validation Level:** EPA Level III

**Laboratory:** EMAX Laboratories, Inc.

**Sample Delivery Group (SDG):** 02I146

**Sample Identification**

818655-B3091

818655-B3092

818655-B3093

818655-B3094

818655-B3095

818655-B3096

818655-B3100

818655-B3101

818655-B3101MS

818655-B3101MSD

## Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodices were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. GC/MS Instrument Performance Check**

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met

## **III. Initial Calibration**

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs)

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination ( $r^2$ ) were greater than or equal to 0.990 .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria

Average relative response factors (RRF) for all semivolatile target compounds and system performance check compounds (SPCCs) were greater than or equal to 0.05 as required.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs)

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

All of the continuing calibration RRF values were greater than or equal to 0.05 ..

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

## **VII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits

## **IX. Regional Quality Assurance and Quality Control**

Not applicable.

## **X. Internal Standards**

All internal standard areas and retention times were within QC limits.

## **XI. Target Compound Identifications**

Raw data were not reviewed for this SDG

## **XII. Compound Quantitation and CRQLs**

Raw data were not reviewed for this SDG

## **XIII. Tentatively Identified Compounds (TICs)**

Raw data were not reviewed for this SDG

## **XIV. System Performance**

Raw data were not reviewed for this SDG

## **XV. Overall Assessment**

Data flags have been summarized at the end of the report

## **XVI. Field Duplicates**

No field duplicates were identified in this SDG

## **XVII. Field Blanks**

No field blanks were identified in this SDG

**MCAS El Toro, CTO 24**

**Semivolatiles - Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

**MCAS El Toro, CTO 24**

**Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

## **Laboratory Data Consultants, Inc. Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24

**Collection Date:** September 19, 2002

**LDC Report Date:** October 8, 2002

**Matrix:** Soil/Water

**Parameters:** Chlorinated Pesticides

**Validation Level:** EPA Level III

**Laboratory:** EMAX Laboratories, Inc

**Sample Delivery Group (SDG):** 02|146

### **Sample Identification**

818655-B3091

818655-B3092

818655-B3093

818655-B3094

818655-B3095

818655-B3096

818655-B3100

818655-B3101

818655-B3102

818655-B3101MS

818655-B3101MSD

## **Introduction**

This data review covers 10 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U      Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J      Indicates an estimated value
- R      Quality control indicates the data is not usable
- N      Presumptive evidence of presence of the constituent
- UJ     Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A      Indicates the finding is based upon technical validation criteria.
- P      Indicates the finding is related to a protocol/contractual deviation.
- None    Indicates the data was not significantly impacted by the finding, therefore qualification was not required

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. GC/ECD Instrument Performance Check**

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

## **III. Initial Calibration**

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
9/24/02	SI24003/4A	RTX-CLPEST	4,4'-DDE Endrin 4,4'-DDD Methoxychlor	20 18 25 15.03	All samples in SDG 021146	J (all detects) UJ (all non-detects)	A

The individual 4,4'-DDT and Endrin breakdowns were less than 15.0%.

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable Percent recoveries (%R) and relative percent differences (RPD) were within QC limits

## **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **IX. Regional Quality Assurance and Quality Control**

Not applicable.

## **X. Pesticide Cleanup Checks**

### **a. Florisil Cartridge Check**

Florisil cleanup was not required and therefore not performed in this SDG.

### **b. GPC Calibration**

GPC cleanup was not required and therefore not performed in this SDG.

## **XI. Target Compound Identification**

Raw data were not reviewed for this SDG

## **XII. Compound Quantitation and Reported CRQLs**

Raw data were not reviewed for this SDG.

## **XIII. Overall Assessment of Data**

Data flags are summarized at the end of this report.

## **XIV. Field Duplicates**

No field duplicates were identified in this SDG.

## **XV. Field Blanks**

Sample 818655-B3102 was identified as an equipment rinsate No chlorinated pesticide contaminants were found in this blank

**MCAS EI Toro, CTO 24****Chlorinated Pesticides - Data Qualification Summary - SDG 02I146**

SDG	Sample	Compound	Flag	A or P	Reason
02I146	818655-B3091 818655-B3092 818655-B3093 818655-B3094 818655-B3095 818655-B3096 818655-B3100 818655-B3101 818655-B3102	4,4'-DDE Endrin 4,4'-DDD Methoxychlor	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

**MCAS EI Toro, CTO 24****Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

## **Laboratory Data Consultants, Inc. Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24  
**Collection Date:** September 19, 2002  
**LDC Report Date:** October 8, 2002  
**Matrix:** Soil/Water  
**Parameters:** Polychlorinated Biphenyls  
**Validation Level:** EPA Level III  
**Laboratory:** EMAX Laboratories, Inc.  
**Sample Delivery Group (SDG):** 02I146

### **Sample Identification**

818655-B3091  
818655-B3092  
818655-B3093  
818655-B3094  
818655-B3095  
818655-B3096  
818655-B3100  
818655-B3101  
818655-B3102  
818655-B3101MS  
818655-B3101MSD

## **Introduction**

This data review covers 10 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data

The following are definitions of the data qualifiers:

- U      Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J      Indicates an estimated value.
- R      Quality control indicates the data is not usable
- N      Presumptive evidence of presence of the constituent.
- UJ     Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A      Indicates the finding is based upon technical validation criteria
- P      Indicates the finding is related to a protocol/contractual deviation.
- None    Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met

The chain-of-custodices were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria

## **II. GC/ECD Instrument Performance Check**

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections

## **III. Initial Calibration**

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **IX. Regional Quality Assurance and Quality Control**

Not applicable.

## **X. Pesticide Cleanup Checks**

### **a. Florisil Cartridge Check**

Florisil cleanup was not required and therefore not performed in this SDG.

### **b. GPC Calibration**

GPC cleanup was not required and therefore not performed in this SDG.

## **XI. Target Compound Identification**

Raw data were not reviewed for this SDG

## **XII. Compound Quantitation and Reported CRQLs**

Raw data were not reviewed for this SDG

## **XIII. Overall Assessment of Data**

Data flags are summarized at the end of this report.

## **XIV. Field Duplicates**

No field duplicates were identified in this SDG.

## **XV. Field Blanks**

Sample 818655-B3102 was identified as an equipment rinsate. No polychlorinated biphenyl contaminants were found in this blank.

**MCAS EI Toro, CTO 24**

**Polychlorinated Biphenyls - Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

**MCAS EI Toro, CTO 24**

**Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24

**Collection Date:** September 19, 2002

**LDC Report Date:** October 8, 2002

**Matrix:** Soil/Water

**Parameters:** Metals

**Validation Level:** EPA Level III

**Laboratory:** EMAX Laboratories, Inc.

**Sample Delivery Group (SDG):** 02I146

**Sample Identification**

818655-B3091

818655-B3092

818655-B3093

818655-B3094

818655-B3095

818655-B3096

818655-B3100

818655-B3101

818655-B3102

ICS ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
ICSAB	Antimony	125 (80-120)	All samples in SDG 021146	None	P

## V. Matrix Spike Analysis

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

## VI. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

## VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG

## IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

## X. ICP Serial Dilution

Although ICP serial dilution analysis was not required by the method, it was performed by the laboratory. The analysis criteria were met.

## XI. Sample Result Verification

Raw data were not reviewed for this SDG.

## XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

## XIII. Field Duplicates

No field duplicates were identified in this SDG

#### XIV. Field Blanks

Sample 818655-B3102 was identified as an equipment rinsate. No metal contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Analyte	Concentration (ug/L)
818655-B3102	Mercury Calcium Sodium	0.113 88.2 380

**MCAS El Toro, CTO 24****Metals - Data Qualification Summary - SDG 02I146**

SDG	Sample	Analyte	Flag	A or P	Reason
02I146	818655-B3091 818655-B3092 818655-B3093 818655-B3094 818655-B3095 818655-B3096 818655-B3100 818655-B3101 818655-B3102	Antimony	None	P	ICP interference check sample analysis (%R)

**MCAS El Toro, CTO 24****Metals - Laboratory Blank Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24  
**Collection Date:** September 19, 2002  
**LDC Report Date:** October 8, 2002  
**Matrix:** Soil/Water  
**Parameters:** Total Petroleum Hydrocarbons as Gasoline  
**Validation Level:** EPA Level III  
**Laboratory:** EMAX Laboratories, Inc  
**Sample Delivery Group (SDG):** 02|146

**Sample Identification**

818655-B3091  
818655-B3092  
818655-B3093  
818655-B3094  
818655-B3095  
818655-B3096  
818655-B3100  
818655-B3101  
818655-B3102

## Introduction

This data review covers 8 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 for Total Petroleum Hydrocarbons (TPH) as Gasoline

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX

Raw data were not reviewed for this SDG. The review was based on QC data.

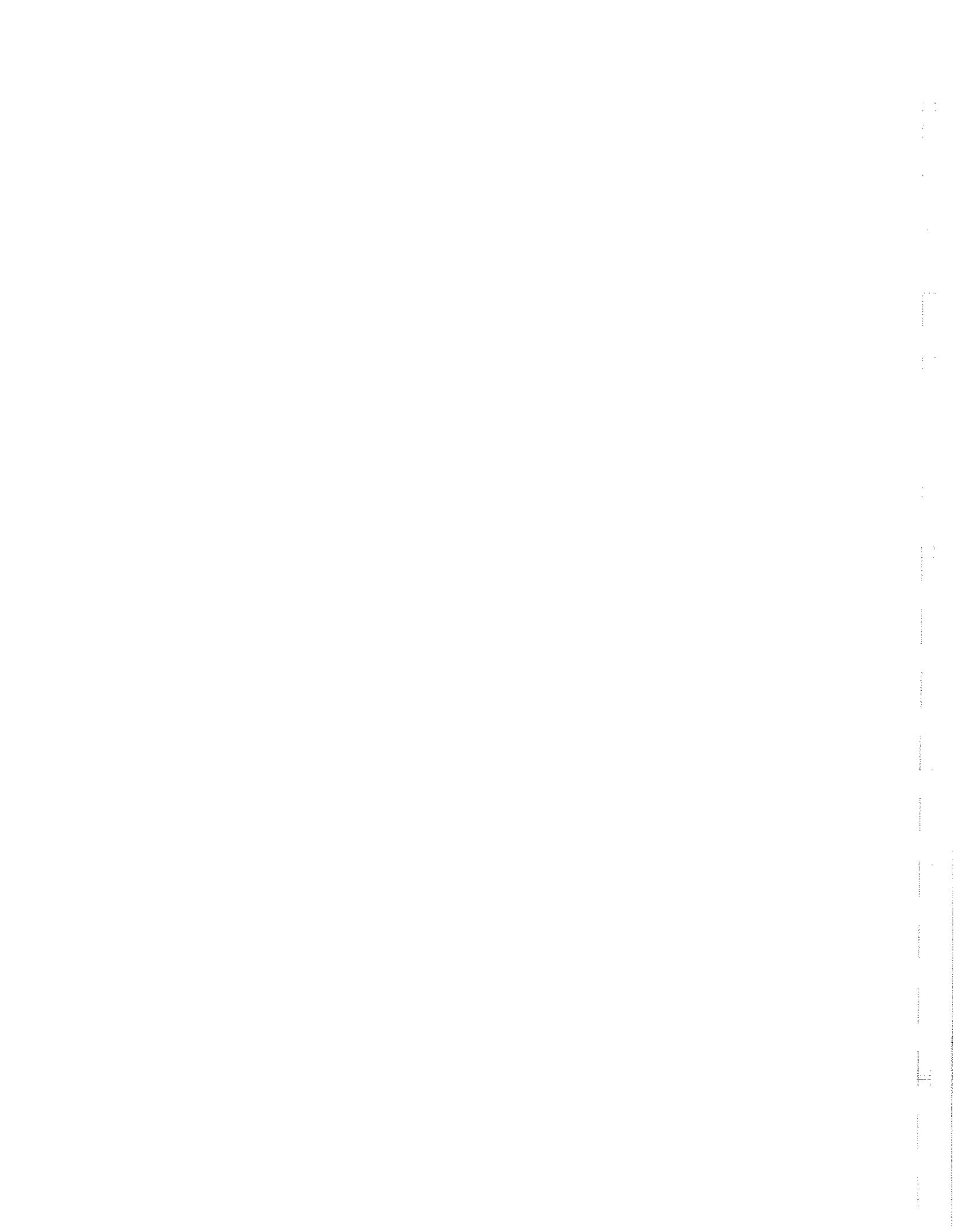
The following are definitions of the data qualifiers:

- U     Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J     Indicates an estimated value.
- R     Quality control indicates the data is not usable.
- N     Presumptive evidence of presence of the constituent
- UJ    Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value
- A     Indicates the finding is based upon technical validation criteria.
- P     Indicates the finding is related to a protocol/contractual deviation.

None    Indicates the data was not significantly impacted by the finding, therefore qualification was not required

## **APPENDIX G**

### **LABORATORY ANALYTICAL REPORT**



**the big group**  
IT Corporation  
2790 Masside Blvd.  
Monroeville, PA 15146-2792  
(412)372-7701

### CHAIN-OF-CUSTODY RECORD

PROJECT DATA MANAGER'S COPY

A 14639

IT'S LAB COORDINATOR

LAB COORDINATOR'S PHONE

919-660-7537

LAB COORDINATOR'S FAX

919-475-5433

LAB COORDINATOR'S EMAIL

EL 100

CITY, STATE AND ZIP CODE

SANTA ANA, CA

CLIENT

EL 100

PROJECT MANAGER'S PHONE

919-660-7576

PROJECT MANAGER'S FAX

919-474-8309

PROJECT NUMBER

818655-133091

PROJECT CONTACT

LYNN TEEFFERSON

PROJECT ADDRESS

MCAS EL 100

PROJECT MANAGER

DIAHNTY RIVAIL

PROJECT COORDINATOR'S PHONE

919-660-7537

PROJECT COORDINATOR'S FAX

919-475-5433

PROJECT COORDINATOR'S EMAIL

EL 100

PROJECT COORDINATOR'S CITY, STATE AND ZIP CODE

SANTA ANA, CA

PROJECT COORDINATOR'S CLIENT

EL 100

PROJECT COORDINATOR'S PROJECT NUMBER

818655-133091

PROJECT COORDINATOR'S PROJECT FAX

919-475-5433

PROJECT COORDINATOR'S PROJECT EMAIL

EL 100

PROJECT COORDINATOR'S PROJECT CITY, STATE AND ZIP CODE

SANTA ANA, CA

PROJECT COORDINATOR'S PROJECT CLIENT

EL 100

PROJECT COORDINATOR'S PROJECT PROJECT NUMBER

818655-133091

PROJECT COORDINATOR'S PROJECT PROJECT FAX

919-475-5433

PROJECT COORDINATOR'S PROJECT PROJECT EMAIL

EL 100

PROJECT COORDINATOR'S PROJECT PROJECT CITY, STATE AND ZIP CODE

SANTA ANA, CA

PROJECT COORDINATOR'S PROJECT PROJECT CLIENT

EL 100

PROJECT COORDINATOR'S PROJECT PROJECT PROJECT NUMBER

818655-133091

PROJECT COORDINATOR'S PROJECT PROJECT PROJECT FAX

919-475-5433

PROJECT COORDINATOR'S PROJECT PROJECT PROJECT EMAIL

EL 100

PROJECT COORDINATOR'S PROJECT PROJECT PROJECT CITY, STATE AND ZIP CODE

SANTA ANA, CA

PROJECT COORDINATOR'S PROJECT PROJECT PROJECT CLIENT

EL 100

### Project Information Section

For Project Personnel Only  
Do Not Submit to Laboratory

FORM 10019 REV. 9-99

MAIL REPORT (COMPANY NAME)

SHAW E&I

RECIPIENT NAME

SHAW INC

ADDRESS

15110

CITY, STATE AND ZIP CODE

RWANDA

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Comments

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

C - Composite

F - Field Sample

QC - Quality Control Sample

Sample Type

G - Grab

# the i group

IT Corporation  
2790 Rossdale Blvd.  
(412)372-7701

## CHAIN-OF-CUSTODY RECORD

PROJECT DATA MANAGERS COPY

**A 14640**

Project Information Section  
For Project Personnel Only  
Do Not Submit to Laboratory

LAB COORDINATOR'S PHONE		LAB COORDINATOR'S FAX	LAB COORDINATOR'S NAME	LAB COORDINATOR'S ID	LABORATORY SERVICE ID	LABORATORY CONTACT	LABORATORY FAX	LABORATORY ADDRESS	PROJECT NUMBER	PROJECT PHONE	PROJECT FAX	RECIPIENT NAME	RECIPIENT ADDRESS	MAIL REPORT (COMPANY NAME)	
PROJECT NAME <u>EL TEC</u>	949-660-7537	949-475-5433	<u>EL TEC</u>	<u>EL TEC</u>	<u>EL TEC</u>	<u>SHAY E &amp; I</u>	<u>SHAY E &amp; I</u>	<u>1835 N 31st ST</u>	<u>818655</u>	<u>710-588-8881</u>	<u>-</u>	<u>DIAZ</u>	<u>1835 N 31st ST</u>	<u>SHAY E &amp; I</u>	
PROJECT CONTACT <u>LYNN STEFFERSON</u>	949-660-7537	949-475-5433	<u>LYNN STEFFERSON</u>	<u>LYNN STEFFERSON</u>	<u>LYNN STEFFERSON</u>	<u>SHAY E &amp; I</u>	<u>SHAY E &amp; I</u>	<u>1835 N 31st ST</u>	<u>818655</u>	<u>710-588-8881</u>	<u>-</u>	<u>DIAZ</u>	<u>1835 N 31st ST</u>	<u>SHAY E &amp; I</u>	
PROJECT ADDRESS <u>MCS EL TEC</u>	SANTA ANA, CA	CITY, STATE AND ZIP CODE <u>SANTA ANA, CA</u>	CLIENT <u>EL TEC</u>	PROJECT MANAGER'S PHONE <u>949-660-7576</u>	PROJECT MANAGER'S FAX <u>949-474-8309</u>	PROJECT MANAGER'S NAME <u>MANUFACTURER RONAL</u>	PROJECT MANAGER'S ID <u>818655-B3100</u>	PROJECT MANAGER'S FAX <u>949-474-8309</u>	PROJECT MANAGER'S ID <u>818655-B3100</u>	PROJECT MANAGER'S FAX <u>949-474-8309</u>	PROJECT MANAGER'S NAME <u>MANUFACTURER RONAL</u>	PROJECT MANAGER'S ID <u>818655-B3100</u>	PROJECT MANAGER'S FAX <u>949-474-8309</u>	PROJECT MANAGER'S NAME <u>MANUFACTURER RONAL</u>	
PROJECT MANAGER <u>MANUFACTURER RONAL</u>															
Comments															
Sample Identifier <u>818655-B3100</u>	Sample Date <u>09/19/01</u>	Processor ID <u>5</u>	Processor Name <u>SHAY E &amp; I</u>	Processor Date <u>09/19/01</u>	Processor Name <u>SHAY E &amp; I</u>	Processor Date <u>09/19/01</u>	Processor Name <u>SHAY E &amp; I</u>	Processor Date <u>09/19/01</u>	Processor Name <u>SHAY E &amp; I</u>	Processor Date <u>09/19/01</u>	Processor Name <u>SHAY E &amp; I</u>	Processor Date <u>09/19/01</u>	Processor Name <u>SHAY E &amp; I</u>	Processor Date <u>09/19/01</u>	
1	<u>818655-B3101</u>	<u>5</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	
2															
3	<u>818655-B3102</u>	<u>5</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	<u>SHAY E &amp; I</u>	<u>09/19/01</u>	
4															
5															
6															
7															
8															
9															
10															
COOLER AND AIR BILL NUMBER <u>SHAY E &amp; I</u>															
SAMPLES COLLECTED BY: <u>P. REEVES</u>	RECEIVED BY <u>P. REEVES</u>	DATE <u>9/19/01</u>	TIME <u>9:53</u>	COOLER TEMPERATURE UPON RECEIPT: <u>90° F</u>											
SAMPLE'S CONDITION UPON RECEIPT: <u>OK</u>															

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Manilla - Project Data Manager

Sample Type: G - Grub, C - Composite, F - Field Sample,  
QC - Quality Control Sample

PROJECT DATA MANAGERS COPY

Sample Point Location	G	C	F	QC
1) 955-A1 @ 18"	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) AA10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) 955-AA @ 36"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) TA10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) EQUIPMENT RNSATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments				

SW 5030B/8260B  
VOLATILE ORGANICS BY GC/MS

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
Batch No.   : 021146           Date Extracted: 09/22/02 02:39
Sample ID: 818655-B3090       Date Analyzed: 09/22/02 02:39
Lab Samp ID: I146-01         Dilution Factor: 1
Lab File ID: RIW675          Matrix      : WATER
Ext Btch ID: V006157         % Moisture  : NA
Calib. Ref.: RIW335          Instrument ID : T-006
=====
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYL VINYL ETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	2
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	2.5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE, TOTAL	ND	5	3
METHYLENE CHLORIDE	2.1J	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
1,2-DICHLOROETHANE-D4	91	86-118	
BROMOFLUOROBENZENE	88	86-115	
TOLUENE-D8	95	88-110	

2004

SW 5030B/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/22/02 03:17
 Sample ID: 818655-B3102 Date Analyzed: 09/22/02 03:17
 Lab Samp ID: I146-13 Dilution Factor: 1
 Lab File ID: RIW676 Matrix : WATER
 Ext Btch ID: V006157 % Moisture : NA
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYL VINYL ETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	2
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	2.5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE, TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2
<hr/>			
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
1,2-DICHLOROETHANE-D4	92	86-118	
BROMOFLUOROBENZENE	86	86-115	
TOLUENE-D8	96	88-110	

2005

SW 5035/82608  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 10:21
 Sample ID: 818655-B3091 Date Analyzed: 09/24/02 10:21
 Lab Samp ID: I146-02 Dilution Factor: .94
 Lab File ID: RIW759 Matrix : SOIL
 Ext Btch ID: V006I64 % Moisture : 8.5
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.1	2.1
1,1,2,2-TETRACHLOROETHANE	ND	5.1	2.1
1,1,2-TRICHLOROETHANE	ND	5.1	2.1
1,1-DICHLOROETHANE	ND	5.1	2.1
1,1-DICHLOROETHENE	ND	5.1	2.1
1,2-DICHLOROETHANE	ND	5.1	2.1
1,2-DICHLOROPROPANE	ND	5.1	2.1
2-BUTANONE (MEK)	ND	51	5.1
2-HEXANONE	ND	51	5.1
2-CHLOROETHYL VINYL ETHER	ND	51	2.1
4-METHYL-2-PENTANONE (MIBK)	ND	51	5.1
ACETONE	21J	51	5.1
BENZENE	ND	5.1	2.1
BROMODICHLOROMETHANE	ND	5.1	2.1
BROMOFORM	ND	5.1	2.1
BROMOMETHANE	ND	5.1	3.1
CARBON DISULFIDE	ND	5.1	2.1
CARBON TETRACHLORIDE	ND	5.1	2.1
CHLOROBENZENE	ND	5.1	2.1
CHLOROETHANE	ND	5.1	3.1
CHLOROFORM	ND	5.1	2.1
CHLOROMETHANE	ND	5.1	5.1
CIS-1,2-DICHLOROETHENE	ND	5.1	2.1
CIS-1,3-DICHLOROPROPENE	ND	5.1	2.1
DIBROMOCHLOROMETHANE	ND	5.1	2.1
ETHYLBENZENE	ND	5.1	2.1
XYLENE, TOTAL	ND	5.1	3.1
METHYLENE CHLORIDE	ND	5.1	2.1
MTBE	ND	10	2.1
STYRENE	ND	5.1	2.1
TOLUENE	ND	5.1	2.1
TRANS-1,2-DICHLOROETHENE	ND	5.1	2.1
TRANS-1,3-DICHLOROPROPENE	ND	5.1	2.1
TRICHLOROETHENE	ND	5.1	2.1
TETRACHLOROETHENE	ND	5.1	2.1
VINYL ACETATE	ND	51	2.1
VINYL CHLORIDE	ND	5.1	2.1
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
1,2-DICHLOROETHANE-D4	104	80-120	
BROMOFLUOROBENZENE	92	74-121	
TOLUENE-D8	100	81-117	

Preservation Date: 09/20/02 15:00

2033

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 10:58
 Sample ID: 818655-B3092 Date Analyzed: 09/24/02 10:58
 Lab Samp ID: I146-03 Dilution Factor: .98
 Lab File ID: RIW760 Matrix : SOIL
 Ext Btch ID: V006164 % Moisture : 9.2
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.4	2.2
1,1,2,2-TETRACHLOROETHANE	ND	5.4	2.2
1,1,2-TRICHLOROETHANE	ND	5.4	2.2
1,1-DICHLOROETHANE	ND	5.4	2.2
1,1-DICHLOROETHENE	ND	5.4	2.2
1,2-DICHLOROETHANE	ND	5.4	2.2
1,2-DICHLOROPROPANE	ND	5.4	2.2
2-BUTANONE (MEK)	ND	54	5.4
2-HEXANONE	ND	54	5.4
2-CHLOROETHYL VINYL ETHER	ND	54	2.2
4-METHYL-2-PENTANONE (MIBK)	ND	54	5.4
ACETONE	ND	54	5.4
BENZENE	ND	5.4	2.2
BROMODICHLOROMETHANE	ND	5.4	2.2
BROMOFORM	ND	5.4	2.2
BROMOMETHANE	ND	5.4	3.2
CARBON DISULFIDE	ND	5.4	2.2
CARBON TETRACHLORIDE	ND	5.4	2.2
CHLOROBENZENE	ND	5.4	2.2
CHLOROETHANE	ND	5.4	3.2
CHLOROFORM	ND	5.4	2.2
CHLOROMETHANE	ND	5.4	5.4
CIS-1,2-DICHLOROETHENE	ND	5.4	2.2
CIS-1,3-DICHLOROPROPENE	ND	5.4	2.2
DIBROMOCHLOROMETHANE	ND	5.4	2.2
ETHYLBENZENE	ND	5.4	2.2
XYLENE, TOTAL	ND	5.4	3.2
METHYLENE CHLORIDE	ND	5.4	2.2
MTBE	ND	11	2.2
STYRENE	ND	5.4	2.2
TOLUENE	ND	5.4	2.2
TRANS-1,2-DICHLOROETHENE	ND	5.4	2.2
TRANS-1,3-DICHLOROPROPENE	ND	5.4	2.2
TRICHLOROETHENE	ND	5.4	2.2
TETRACHLOROETHENE	ND	5.4	2.2
VINYL ACETATE	ND	54	2.2
VINYL CHLORIDE	ND	5.4	2.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	104	80-120
BROMOFLUOROBENZENE	91	74-121
TOLUENE-D8	92	81-117

Preservation Date: 09/20/02 15:00

2034

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 11:34
 Sample ID: 818655-B3093 Date Analyzed: 09/24/02 11:34
 Lab Samp ID: 1146-04 Dilution Factor: 1.0
 Lab File ID: RIW761 Matrix : SOIL
 Ext Btch ID: V006164 % Moisture : 8.2
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.4	2.2
1,1,2,2-TETRACHLOROETHANE	ND	5.4	2.2
1,1,2-TRICHLOROETHANE	ND	5.4	2.2
1,1-DICHLOROETHANE	ND	5.4	2.2
1,1-DICHLOROETHENE	ND	5.4	2.2
1,2-DICHLOROETHANE	ND	5.4	2.2
1,2-DICHLOROPROPANE	ND	5.4	2.2
2-BUTANONE (MEK)	ND	54	5.4
2-HEXANONE	ND	54	5.4
2-CHLOROETHYL VINYLETHER	ND	54	2.2
4-METHYL-2-PENTANONE (MIBK)	ND	54	5.4
ACETONE	22J	54	5.4
BENZENE	ND	5.4	2.2
BROMODICHLOROMETHANE	ND	5.4	2.2
BROMOFORM	ND	5.4	2.2
BROMOMETHANE	ND	5.4	3.3
CARBON DISULFIDE	ND	5.4	2.2
CARBON TETRACHLORIDE	ND	5.4	2.2
CHLOROBENZENE	ND	5.4	2.2
CHLOROETHANE	ND	5.4	3.3
CHLOROFORM	ND	5.4	2.2
CHLOROMETHANE	ND	5.4	5.4
CIS-1,2-DICHLOROETHENE	ND	5.4	2.2
CIS-1,3-DICHLOROPROPENE	ND	5.4	2.2
DIBROMOCHLOROMETHANE	ND	5.4	2.2
ETHYLBENZENE	ND	5.4	2.2
XYLENE, TOTAL	ND	5.4	3.3
METHYLENE CHLORIDE	ND	5.4	2.2
MTBE	ND	11	2.2
STYRENE	ND	5.4	2.2
TOLUENE	ND	5.4	2.2
TRANS-1,2-DICHLOROETHENE	ND	5.4	2.2
TRANS-1,3-DICHLOROPROPENE	ND	5.4	2.2
TRICHLOROETHENE	ND	5.4	2.2
TETRACHLOROETHENE	ND	5.4	2.2
VINYL ACETATE	ND	54	2.2
VINYL CHLORIDE	ND	5.4	2.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	80-120
BROMOFLUOROBENZENE	100	74-121
TOLUENE-D8	99	81-117

Preservation Date: 09/20/02 15:00

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 02I146 Date Extracted: 09/24/02 12:12
 Sample ID: 818655-B3094 Date Analyzed: 09/24/02 12:12
 Lab Samp ID: I146-05 Dilution Factor: .96
 Lab File ID: RIW762 Matrix : SOIL
 Ext Btch ID: V006164 % Moisture : 6.2
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.1	2
1,1,2,2-TETRACHLOROETHANE	ND	5.1	2
1,1,2-TRICHLOROETHANE	ND	5.1	2
1,1-DICHLOROETHANE	ND	5.1	2
1,1-DICHLOROETHENE	ND	5.1	2
1,2-DICHLOROETHANE	ND	5.1	2
1,2-DICHLOROPROPANE	ND	5.1	2
2-BUTANONE (MEK)	ND	51	5.1
2-HEXANONE	ND	51	5.1
2-CHLOROETHYL VINYL ETHER	ND	51	2
4-METHYL-2-PENTANONE (MIBK)	ND	51	5.1
ACETONE	ND	51	5.1
BENZENE	ND	5.1	2
BROMODICHLOROMETHANE	ND	5.1	2
BROMOFORM	ND	5.1	2
BROMOMETHANE	ND	5.1	3.1
CARBON DISULFIDE	ND	5.1	2
CARBON TETRACHLORIDE	ND	5.1	2
CHLOROBENZENE	ND	5.1	2
CHLOROETHANE	ND	5.1	3.1
CHLOROFORM	ND	5.1	2
CHLORMETHANE	ND	5.1	5.1
CIS-1,2-DICHLOROETHENE	ND	5.1	2
CIS-1,3-DICHLOROPROPENE	ND	5.1	2
DIBROMOCHLOROMETHANE	ND	5.1	2
ETHYLBENZENE	ND	5.1	2
XYLENE, TOTAL	ND	5.1	3.1
METHYLENE CHLORIDE	ND	5.1	2
MTBE	ND	10	2
STYRENE	ND	5.1	2
TOLUENE	ND	5.1	2
TRANS-1,2-DICHLOROETHENE	ND	5.1	2
TRANS-1,3-DICHLOROPROPENE	ND	5.1	2
TRICHLOROETHENE	ND	5.1	2
TETRACHLOROETHENE	ND	5.1	2
VINYL ACETATE	ND	51	2
VINYL CHLORIDE	ND	5.1	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	80-120
BROMOFLUOROBENZENE	93	74-121
TOLUENE-D8	90	81-117

Preservation Date: 09/20/02 15:00

2036

SW 5035/82608  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 12:49
 Sample ID: 818655-B3095 Date Analyzed: 09/24/02 12:49
 Lab Samp ID: I146-06 Dilution Factor: .98
 Lab File ID: RIW763 Matrix : SOIL
 Ext Btch ID: V006164 % Moisture : 10.6
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.5	2.2
1,1,2,2-TETRACHLOROETHANE	ND	5.5	2.2
1,1,2-TRICHLOROETHANE	ND	5.5	2.2
1,1-DICHLOROETHANE	ND	5.5	2.2
1,1-DICHLOROETHENE	ND	5.5	2.2
1,2-DICHLOROETHANE	ND	5.5	2.2
1,2-DICHLOROPROPANE	ND	5.5	2.2
2-BUTANONE (MEK)	ND	55	5.5
2-HEXANONE	ND	55	5.5
2-CHLOROETHYLVINYLETHER	ND	55	2.2
4-METHYL-2-PENTANONE (MIBK)	ND	55	5.5
ACETONE	13J	55	5.5
BENZENE	ND	5.5	2.2
BROMODICHLOROMETHANE	ND	5.5	2.2
BROMOFORM	ND	5.5	2.2
BROMOMETHANE	ND	5.5	3.3
CARBON DISULFIDE	ND	5.5	2.2
CARBON TETRACHLORIDE	ND	5.5	2.2
CHLOROBENZENE	ND	5.5	2.2
CHLOROETHANE	ND	5.5	3.3
CHLOROFORM	ND	5.5	2.2
CHLOROMETHANE	ND	5.5	5.5
CIS-1,2-DICHLOROETHENE	ND	5.5	2.2
CIS-1,3-DICHLOROPROPENE	ND	5.5	2.2
DIBROMOCHLOROMETHANE	ND	5.5	2.2
ETHYLBENZENE	ND	5.5	2.2
XYLENE, TOTAL	ND	5.5	3.3
METHYLENE CHLORIDE	ND	5.5	2.2
MTBE	ND	11	2.2
STYRENE	ND	5.5	2.2
TOLUENE	ND	5.5	2.2
TRANS-1,2-DICHLOROETHENE	ND	5.5	2.2
TRANS-1,3-DICHLOROPROPENE	ND	5.5	2.2
TRICHLOROETHENE	ND	5.5	2.2
TETRACHLOROETHENE	ND	5.5	2.2
VINYL ACETATE	ND	55	2.2
VINYL CHLORIDE	ND	5.5	2.2
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
1,2-DICHLOROETHANE-D4	97	80-120	
BROMOFLUOROBENZENE	89	74-121	
TOLUENE-D8	93	81-117	

Preservation Date: 09/20/02 15:00

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 02I146 Date Extracted: 09/24/02 13:25
 Sample ID: 818655-B3096 Date Analyzed: 09/24/02 13:25
 Lab Samp ID: I146-07 Dilution Factor: .81
 Lab File ID: RIW764 Matrix : SOIL
 Ext Btch ID: V006I64 % Moisture : 13.0
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	4.7	1.9
1,1,2,2-TETRACHLOROETHANE	ND	4.7	1.9
1,1,2-TRICHLOROETHANE	ND	4.7	1.9
1,1-DICHLOROETHANE	ND	4.7	1.9
1,1-DICHLOROETHENE	ND	4.7	1.9
1,2-DICHLOROETHANE	ND	4.7	1.9
1,2-DICHLOROPROPANE	ND	4.7	1.9
2-BUTANONE (MEK)	ND	47	4.7
2-HEXANONE	ND	47	4.7
2-CHLOROETHYL VINYLETHER	ND	47	1.9
4-METHYL-2-PENTANONE (MIBK)	ND	47	4.7
ACETONE	ND	47	4.7
BENZENE	ND	4.7	1.9
BROMODICHLOROMETHANE	ND	4.7	1.9
BROMOFORM	ND	4.7	1.9
BROMOMETHANE	ND	4.7	2.8
CARBON DISULFIDE	ND	4.7	1.9
CARBON TETRACHLORIDE	ND	4.7	1.9
CHLOROBENZENE	ND	4.7	1.9
CHLOROETHANE	ND	4.7	2.8
CHLOROFORM	ND	4.7	1.9
CHLOROMETHANE	ND	4.7	4.7
CIS-1,2-DICHLOROETHENE	ND	4.7	1.9
CIS-1,3-DICHLOROPROPENE	ND	4.7	1.9
DIBROMOCHLOROMETHANE	ND	4.7	1.9
ETHYLBENZENE	ND	4.7	1.9
XYLENE, TOTAL	ND	4.7	2.8
METHYLENE CHLORIDE	ND	4.7	1.9
MTBE	ND	9.3	1.9
STYRENE	ND	4.7	1.9
TOLUENE	ND	4.7	1.9
TRANS-1,2-DICHLOROETHENE	ND	4.7	1.9
TRANS-1,3-DICHLOROPROPENE	ND	4.7	1.9
TRICHLOROETHENE	ND	4.7	1.9
TETRACHLOROETHENE	ND	4.7	1.9
VINYL ACETATE	ND	47	1.9
VINYL CHLORIDE	ND	4.7	1.9

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	80-120
BROMOFLUOROBENZENE	92	74-121
TOLUENE-D8	91	81-117

Preservation Date: 09/20/02 15:00

2038

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
Batch No.   : 021146           Date Extracted: 09/24/02 14:02
Sample ID   : 818655-B3100     Date Analyzed: 09/24/02 14:02
Lab Samp ID: I146-11         Dilution Factor: .82
Lab File ID: RIW765          Matrix       : SOIL
Ext Btch ID: V006164         % Moisture  : 6.3
Calib. Ref.: RIW335          Instrument ID : T-006
=====
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	4.4	1.8
1,1,2,2-TETRACHLOROETHANE	ND	4.4	1.8
1,1,2-TRICHLOROETHANE	ND	4.4	1.8
1,1-DICHLOROETHANE	ND	4.4	1.8
1,1-DICHLOROETHENE	ND	4.4	1.8
1,2-DICHLOROETHANE	ND	4.4	1.8
1,2-DICHLOROPROPANE	ND	4.4	1.8
2-BUTANONE (MEK)	ND	44	4.4
2-HEXANONE	ND	44	4.4
2-CHLOROETHYLVINYLETHER	ND	44	1.8
4-METHYL-2-PENTANONE (MIBK)	ND	44	4.4
ACETONE	28J	44	4.4
BENZENE	ND	4.4	1.8
BROMODICHLOROMETHANE	ND	4.4	1.8
BROMOFORM	ND	4.4	1.8
BROMOMETHANE	ND	4.4	2.6
CARBON DISULFIDE	ND	4.4	1.8
CARBON TETRACHLORIDE	ND	4.4	1.8
CHLOROBENZENE	ND	4.4	1.8
CHLOROETHANE	ND	4.4	2.6
CHLOROFORM	ND	4.4	1.8
CHLOROMETHANE	ND	4.4	4.4
CIS-1,2-DICHLOROETHENE	ND	4.4	1.8
CIS-1,3-DICHLOROPROPENE	ND	4.4	1.8
DIBROMOCHLOROMETHANE	ND	4.4	1.8
ETHYLBENZENE	ND	4.4	1.8
XYLENE, TOTAL	ND	4.4	2.6
METHYLENE CHLORIDE	ND	4.4	1.8
MTBE	ND	8.8	1.8
STYRENE	ND	4.4	1.8
TOLUENE	ND	4.4	1.8
TRANS-1,2-DICHLOROETHENE	ND	4.4	1.8
TRANS-1,3-DICHLOROPROPENE	ND	4.4	1.8
TRICHLOROETHENE	ND	4.4	1.8
TETRACHLOROETHENE	ND	4.4	1.8
VINYL ACETATE	ND	44	1.8
VINYL CHLORIDE	ND	4.4	1.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	80-120
BROMOFLUOROBENZENE	97	74-121
TOLUENE-D8	94	81-117

Preservation Date: 09/20/02 15:00

2039

SW 5035/8260B  
VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 02I146 Date Extracted: 09/24/02 14:39
 Sample ID: 818655-B3101 Date Analyzed: 09/24/02 14:39
 Lab Samp ID: I146-12 Dilution Factor: .93
 Lab File ID: RIW766 Matrix : SOIL
 Ext Btch ID: V006164 % Moisture : 7.3
 Calib. Ref.: RIW335 Instrument ID : T-006
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYL VINYLETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	3
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE, TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	80-120
BROMOFLUOROBENZENE	91	74-121
TOLUENE-D8	93	81-117

Preservation Date: 09/20/02 15:00

2040

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No.: 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3091	Date Analyzed: 09/24/02 15:10
Lab Samp ID: I146-02	Dilution Factor: 1
Lab File ID: RIX217	Matrix : SOIL
Ext Btch ID: SVI036S	% Moisture : 8.5
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS ( $\mu\text{g}/\text{kg}$ )	RL ( $\mu\text{g}/\text{kg}$ )	MDL ( $\mu\text{g}/\text{kg}$ )
1,2,4-TRICHLOROBENZENE	ND	360	180
1,2-DICHLOROBENZENE	ND	360	180
1,3-DICHLOROBENZENE	ND	360	180
1,4-DICHLOROBENZENE	ND	360	180
2,4,5-TRICHLOROPHENOL	ND	910	180
2,4,6-TRICHLOROPHENOL	ND	360	180
2,4-DIMETHYLPHENOL	ND	360	180
2,4-DINITROPHENOL	ND	360	180
2,4-DINITROTOLUENE	ND	910	180
2,6-DINITROTOLUENE	ND	360	180
2-CHLORONAPHTHALENE	ND	360	180
2-CHLOROPHENOL	ND	360	180
2-METHYLNAPHTHALENE	ND	360	180
2-METHYLPHENOL	ND	360	180
2-NITROANILINE	ND	910	180
2-NITROPHENOL	ND	360	180
3,3'-DICHLOROBENZIDINE	ND	360	180
3-NITROANILINE	ND	910	180
4,6-DINITRO-2-METHYLPHENOL	ND	910	180
4-BROMOPHENYL-PHENYL ETHER	ND	360	180
4-CHLORO-3-METHYLPHENOL	ND	360	180
4-CHLOROANILINE	ND	360	180
4-CHLOROPHENYL-PHENYL ETHER	ND	360	180
4-METHYLPHENOL (1)	ND	360	180
4-NITROANILINE	ND	910	180
4-NITROPHENOL	ND	910	180
ACENAPHTHENE	ND	360	180
ACENAPHTHYLENE	ND	360	180
ANTHRACENE	ND	360	180
BENZO(A)ANTHRACENE	ND	360	180
BENZO(B)FLUORANTHENE	ND	360	180
BENZO(K)FLUORANTHENE	ND	360	180
BENZO(G, H, I)PERYLENE	ND	360	180
BIS(2-CHLOROETHOXY)METHANE	ND	360	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	360	180
BIS(2-ETHYLHEXYL)PHTHALATE	ND	360	180
BUTYLBENZYLPHthalate	ND	360	180
CHRYSENE	ND	360	180
DI-N-BUTYLPHthalate	ND	360	180
DI-N-OCTYLPHthalate	ND	360	180
DIBENZOFURAN	ND	360	180
DIETHYLPHthalate	ND	360	180
DIMETHYLPHthalate	ND	360	180
FLUORANTHENE	ND	360	180
FLUORENE	ND	360	180
HEXAChLOROBUTADIENE	ND	360	180
HEXAChLOROCYCLOPENTADIENE	ND	360	180
HEXAChLOROETHANE	ND	360	180
N-NITROSODIPHENYLAMINE (2)	ND	360	180
NAPHTHALENE	ND	360	180
NITROBENZENE	ND	360	180
PENTACHLOROPHENOL	ND	220	180
PHENANTHRENE	ND	360	180
PHENOL	ND	360	180
PYRENE	ND	360	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	90	25-144
2-FLUOROBIPHENYL	73	34-132
2-FLUOROPHENOL	72	25-132
NITROBENZENE-D5	75	25-135
PHENOL-D5	80	25-135
TERPHENYL-D14	81	32-136

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

3004

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No.: 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3092	Date Analyzed: 09/24/02 15:43
Lab Samp ID: I146-03	Dilution Factor: 1
Lab File ID: RIX218	Matrix : SOIL
Ext Btch ID: SV1036S	% Moisture : 9.2
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	360	180
1,2-DICHLOROBENZENE	ND	360	180
1,3-DICHLOROBENZENE	ND	360	180
1,4-DICHLOROBENZENE	ND	360	180
2,4,5-TRICHLOROPHENOL	ND	910	180
2,4,6-TRICHLOROPHENOL	ND	360	180
2,4-DIMETHYLPHENOL	ND	360	180
2,4-DINITROPHENOL	ND	910	180
2,4-DINITROTOLUENE	ND	360	180
2,6-DINITROTOLUENE	ND	360	180
2-CHLORONAPHTHALENE	ND	360	180
2-CHLOROPHENOL	ND	360	180
2-METHYLNAPHTHALENE	ND	360	180
2-NITROPHENOL	ND	360	180
2-NITROANILINE	ND	910	180
3,3'-DICHLOROBENZIDINE	ND	360	180
3-NITROANILINE	ND	910	180
4,6-DINITRO-2-METHYLPHENOL	ND	910	180
4-BROMOPHENYL-PHENYL ETHER	ND	360	180
4-CHLORO-3-METHYLPHENOL	ND	360	180
4-CHLOROANILINE	ND	360	180
4-CHLOROPHENYL-PHENYL ETHER	ND	360	180
4-METHYLPHENOL (1)	ND	360	180
4-NITROANILINE	ND	910	180
4-NITROPHENOL	ND	910	180
ACENAPHTHENE	ND	360	180
ACENAPHTHYLENE	ND	360	180
ANTHRACENE	ND	360	180
BENZO(A)ANTHRACENE	ND	360	180
BENZO(B)FLUORANTHENE	ND	360	180
BENZO(K)FLUORANTHENE	ND	360	180
BENZO(G,H,I)PERYLENE	ND	360	180
BIS(2-CHLOROETHOXY)METHANE	ND	360	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	360	180
BIS(2-ETHYLHEXYL)PHTHALATE	ND	360	180
BUTYLBENZYLPHthalate	ND	360	180
CHRYSENE	ND	360	180
DI-N-BUTYLPHthalate	ND	360	180
DI-N-OCTYLPHthalate	ND	360	180
DIBENZOFURAN	ND	360	180
DIETHYLPHthalate	ND	360	180
DIMETHYLPHthalate	ND	360	180
FLUORANTHENE	ND	360	180
FLUORENE	ND	360	180
HEXAChLOROBUTADIENE	ND	360	180
HEXAChLOROCYCLOPENTADIENE	ND	360	180
HEXAChLOROETHANE	ND	360	180
N-NITROSODIPHENYLAMINE (2)	ND	360	180
NAPHTHALENE	ND	360	180
NITROBENZENE	ND	360	180
PENTACHLOROPHENOL	ND	220	180
PHENANTHRENE	ND	360	180
PHENOL	ND	360	180
PYRENE	ND	360	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	88	25-144
2-FLUOROBIPHENYL	77	24-135
2-FLUOROPHENOL	77	25-135
NITROBENZENE-D5	80	25-135
PHENOL-D5	85	25-135
TERPHENYL-D14	82	32-136

RL: Reporting Limit  
 (1): Cannot be separated from 3-Methylphenol  
 (2): Cannot be separated from Diphenylamine

**SW 3550B/8270C**  
**SEMI VOLATILE ORGANICS BY GC/MS**

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
Batch No. : 021146 Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3093 Date Analyzed: 09/24/02 16:15
Lab Samp ID: 1146-04 Dilution Factor: 1
Lab File ID: RIX219 Matrix : SOIL
Ext Btch ID: SV1036S % Moisture : 8.2
Calib. Ref.: RHX056 Instrument ID : T-042
=====
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	360	180
1,2-DICHLOROBENZENE	ND	360	180
1,3-DICHLOROBENZENE	ND	360	180
1,4-DICHLOROBENZENE	ND	360	180
2,4,5-TRICHLOROPHENOL	ND	900	180
2,4,6-TRICHLOROPHENOL	ND	360	180
2,4-DICHLOROPHENOL	ND	360	180
2,4-DIMETHYLPHENOL	ND	360	180
2,4-DINITROPHENOL	ND	900	180
2,4-DINITROTOLUENE	ND	360	180
2,6-DINITROTOLUENE	ND	360	180
2-CHLORONAPHTHALENE	ND	360	180
2-CHLOROPHENOL	ND	360	180
2-METHYLNAPHTHALENE	ND	360	180
2-METHYLPHENOL	ND	360	180
2-NITROANILINE	ND	900	180
2-NITROPHENOL	ND	360	180
3,3'-DICHLOROBENZIDINE	ND	360	180
3-NITROANILINE	ND	900	180
4,6-DINITRO-2-METHYLPHENOL	ND	900	180
4-BROMOPHENYL-PHENYL ETHER	ND	360	180
4-CHLORO-3-METHYLPHENOL	ND	360	180
4-CHLOROANILINE	ND	360	180
4-CHLOROPHENYL-PHENYL ETHER	ND	360	180
4-METHYLPHENOL (1)	ND	360	180
4-NITROANILINE	ND	900	180
4-NITROPHENOL	ND	900	180
ACENAPHTHENE	ND	360	180
ACENAPHTHYLENE	ND	360	180
ANTHRACENE	ND	360	180
BENZO(A)ANTHRACENE	ND	360	180
BENZO(B)FLUORANTHENE	ND	360	180
BENZO(K)FLUORANTHENE	ND	360	180
BENZO(G,H,I)PERYLENE	ND	360	180
BIS(2-CHLOROETHOXY)METHANE	ND	360	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	360	180
BIS(2-ETHYLHEXYL)PHTHALATE	ND	360	180
BUTYLBENZYL PHTHALATE	ND	360	180
CHRYSENE	ND	360	180
DI-N-BUTYL PHTHALATE	ND	360	180
DI-N-OCTYL PHTHALATE	ND	360	180
DIBENZOFURAN	ND	360	180
DIETHYL PHTHALATE	ND	360	180
DIMETHYL PHTHALATE	ND	360	180
FLUORANTHENE	ND	360	180
FLUORENE	ND	360	180
HEXA CHLOROBUTADIENE	ND	360	180
HEXA CHLOROCYCLOPENTADIENE	ND	360	180
HEXA CHLOROETHANE	ND	360	180
N-NITROSODIPHENYLAMINE (2)	ND	360	180
NAPHTHALENE	ND	360	180
NITROBENZENE	ND	360	180
PENTACHLOROPHENOL	ND	220	180
PHENANTHRENE	ND	360	180
PHENOL	ND	360	180
PYRENE	ND	360	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	82	25-144
2-FLUOROBIPHENYL	72	34-135
2-FLUOROPHENOL	71	25-135
NITROBENZENE-D5	74	25-135
PHENOL-D5	78	25-135
TERPHENYL-D14	79	32-136

RL: Reporting Limit  
 (1): Cannot be separated from 3-Methylphenol  
 (2): Cannot be separated from Diphenylamine

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No.: 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3094	Date Analyzed: 09/24/02 16:48
Lab Samp ID: I146-05	Dilution Factor: 1
Lab File ID: RIX220	Matrix : SOIL
Ext Btch ID: SV1036S	% Moisture : 6.2
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	350	180
1,2-DICHLOROBENZENE	ND	350	180
1,3-DICHLOROBENZENE	ND	350	180
1,4-DICHLOROBENZENE	ND	350	180
2,4,5-TRICHLOROPHENOL	ND	880	180
2,4,6-TRICHLOROPHENOL	ND	350	180
2,4-DICHLOROPHENOL	ND	350	180
2,4-DIMETHYLPHENOL	ND	350	180
2,4-DINITROPHENOL	ND	880	180
2,4-DINITROTOLUENE	ND	350	180
2,6-DINITROTOLUENE	ND	350	180
2-CHLORONAPHTHALENE	ND	350	180
2-CHLOROPHENOL	ND	350	180
2-METHYLNAPHTHALENE	ND	350	180
2-METHYLPHENOL	ND	350	180
2-NITROANILINE	ND	880	180
2-NITROPHENOL	ND	350	180
3,3'-DICHLOROBENZIDINE	ND	350	180
3-NITROANILINE	ND	880	180
4,6-DINITRO-2-METHYLPHENOL	ND	880	180
4-BROMOPHENYL-PHENYL ETHER	ND	350	180
4-CHLORO-3-METHYLPHENOL	ND	350	180
4-CHLOROANILINE	ND	350	180
4-CHLOROPHENYL-PHENYL ETHER	ND	350	180
4-METHYLPHENOL (1)	ND	350	180
4-NITROANILINE	ND	880	180
4-NITROPHENOL	ND	880	180
ACENAPHTHENE	ND	350	180
ACENAPHTHYLENE	ND	350	180
ANTHRACENE	ND	350	180
BENZO(A)ANTHRACENE	ND	350	180
BENZO(B)FLUORANTHENE	ND	350	180
BENZO(K)FLUORANTHENE	ND	350	180
BENZO(G,H,I)PERYLENE	ND	350	180
BIS(2-CHLOROETHOXY)METHANE	ND	350	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	350	180
BUTYLBENZYLPHthalate	ND	350	180
CHRYSENE	ND	350	180
DI-N-BUTYLPHthalate	ND	350	180
DI-N-OCTYLPHthalate	ND	350	180
DIBENZOFURAN	ND	350	180
DIETHYLPHthalate	ND	350	180
DIMETHYLPHthalate	ND	350	180
FLUORANTHENE	ND	350	180
FLUORENE	ND	350	180
HEXAChLOROBUTADIENE	ND	350	180
HEXAChLOROCYCLOPENTADIENE	ND	350	180
HEXAChLOROETHANE	ND	350	180
N-NITROSODIPHENYLAMINE (2)	ND	350	180
NAPHTHALENE	ND	350	180
NITROBENZENE	ND	350	180
PENTACHLOROPHENOL	ND	210	180
PHENANTHRENE	ND	350	180
PHENOL	ND	350	180
PYRENE	ND	350	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	83	25-144
2-FLUOROBIPHENYL	72	34-135
2-FLUOROPHENOL	75	25-135
NITROBENZENE-D5	77	25-135
PHENOL-D5	82	25-135
TERPHENYL-D14	74	32-136

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No. : 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3095	Date Analyzed: 09/24/02 17:21
Lab Samp ID: I146-06	Dilution Factor: 1
Lab File ID: RIX221	Matrix : SOIL
Ext Btch ID: SV1036S	% Moisture : 10.6
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	370	190
1,2-DICHLOROBENZENE	ND	370	190
1,3-DICHLOROBENZENE	ND	370	190
1,4-DICHLOROBENZENE	ND	370	190
2,4,5-TRICHLOROPHENOL	ND	930	190
2,4,6-TRICHLOROPHENOL	ND	370	190
2,4-DICHLOROPHENOL	ND	370	190
2,4-DIMETHYLPHENOL	ND	370	190
2,4-DINITROPHENOL	ND	930	190
2,4-DINITROTOLUENE	ND	370	190
2,6-DINITROTOLUENE	ND	370	190
2-CHLORONAPHTHALENE	ND	370	190
2-CHLOROPHENOL	ND	370	190
2-METHYLNAPHTHALENE	ND	370	190
2-METHYLPHENOL	ND	370	190
2-NITROANILINE	ND	930	190
2-NITROPHENOL	ND	370	190
3,3'-DICHLOROBENZIDINE	ND	370	190
3-NITROANILINE	ND	930	190
4,6-DINITRO-2-METHYLPHENOL	ND	930	190
4-BROMOPHENYL-PHENYL ETHER	ND	370	190
4-CHLORO-3-METHYLPHENOL	ND	370	190
4-CHLOROANILINE	ND	370	190
4-CHLOROPHENYL-PHENYL ETHER	ND	370	190
4-METHYLPHENOL (1)	ND	370	190
4-NITROANILINE	ND	930	190
4-NITROPHENOL	ND	930	190
ACENAPHTHENE	ND	370	190
ACENAPHTHYLENE	ND	370	190
ANTHRACENE	ND	370	190
BENZO(A)ANTHRACENE	ND	370	190
BENZO(B)FLUORANTHENE	ND	370	190
BENZO(K)FLUORANTHENE	ND	370	190
BENZO(G,H,I)PERYLENE	ND	370	190
BIS(2-CHLOROETHOXY)METHANE	ND	370	190
BIS(2-CHLOROISOPROPYL)ETHER	ND	370	190
BIS(2-ETHYLHEXYL)PHTHALATE	ND	370	190
BUTYLBENZYLPHTHALATE	ND	370	190
CHRYSENE	ND	370	190
DI-N-BUTYLPHTHALATE	ND	370	190
DI-N-OCTYLPHTHALATE	ND	370	190
DIBENZOFURAN	ND	370	190
DIETHYLPHTHALATE	ND	370	190
DIMETHYLPHTHALATE	ND	370	190
FLUORANTHENE	ND	370	190
FLUORENE	ND	370	190
HEXAChLOROBUTADIENE	ND	370	190
HEXAChLOROCYCLOPENTADIENE	ND	370	190
HEXAChLOROETHANE	ND	370	190
N-NITROSODIPHENYLAMINE (2)	ND	370	190
NAPHTHALENE	ND	370	190
NITROBENZENE	ND	370	190
PENTACHLOROPHENOL	ND	220	190
PHENANTHRENE	ND	370	190
PHENOL	ND	370	190
PYRENE	ND	370	190

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	84	25-144
2'FLUOROBIPHENYL	75	34-135
2-FLUOROPHENOL	75	25-135
NITROBENZENE-D5	80	25-135
PHENOL-D5	80	25-135
TERPHENYL-D14	80	32-136

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No.: 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3096	Date Analyzed: 09/24/02 17:53
Lab Samp ID: I146-07	Dilution Factor: 1
Lab File ID: RIX222	Matrix : SOIL
Ext Btch ID: SV1036S	% Moisture : 13.0
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	380	190
1,2-DICHLOROBENZENE	ND	380	190
1,3-DICHLOROBENZENE	ND	380	190
1,4-DICHLOROBENZENE	ND	380	190
2,4,5-TRICHLOROPHENOL	ND	950	190
2,4,6-TRICHLOROPHENOL	ND	380	190
2,4-DICHLOROPHENOL	ND	380	190
2,4-DINITROPHENOL	ND	950	190
2,4-DINITROTOLUENE	ND	380	190
2,6-DINITROTOLUENE	ND	380	190
2-CHLORONAPHTHALENE	ND	380	190
2-CHLOROPHENOL	ND	380	190
2-METHYLNAPHTHALENE	ND	380	190
2-METHYLPHENOL	ND	380	190
2-NITROANILINE	ND	950	190
2-NITROPHENOL	ND	380	190
3,3'-DICHLOROBENZIDINE	ND	380	190
3-NITROANILINE	ND	950	190
4,6-DINITRO-2-METHYLPHENOL	ND	950	190
4-BROMOPHENYL-PHENYL ETHER	ND	380	190
4-CHLORO-3-METHYLPHENOL	ND	380	190
4-CHLOROANILINE	ND	380	190
4-CHLOROPHENYL-PHENYL ETHER	ND	380	190
4-METHYLPHENOL (1)	ND	380	190
4-NITROANILINE	ND	950	190
4-NITROPHENOL	ND	950	190
ACENAPHTHENE	ND	380	190
ACENAPHTHYLENE	ND	380	190
ANTHRACENE	ND	380	190
BENZO(A)ANTHRACENE	ND	380	190
BENZO(B)FLUORANTHENE	ND	380	190
BENZO(K)FLUORANTHENE	ND	380	190
BENZO(G,H,I)PERYLENE	ND	380	190
BIS(2-CHLOROETHOXY)METHANE	ND	380	190
BIS(2-CHLOROISOPROPYL)ETHER	ND	380	190
BIS(2-ETHYLHEXYL)PHTHALATE	ND	380	190
BUTYLBENZYLPHTHALATE	ND	380	190
CHRYSENE	ND	380	190
DI-N-BUTYLPHTHALATE	ND	380	190
DI-N-OCTYLPHTHALATE	ND	380	190
DIBENZOFURAN	ND	380	190
DIETHYLPHTHALATE	ND	380	190
DIMETHYLPHTHALATE	ND	380	190
FLUORANTHENE	ND	380	190
FLUORENE	ND	380	190
HEXAChLOROBUTADIENE	ND	380	190
HEXAChLOROCYCLOPENTADIENE	ND	380	190
HEXAChLOROETHANE	ND	380	190
N-NITROSODIPHENYLAMINE (2)	ND	380	190
NAPHTHALENE	ND	380	190
NITROBENZENE	ND	380	190
PENTACHLOROPHENOL	ND	230	190
PHENANTHRENE	ND	380	190
PHENOL	ND	380	190
PYRENE	ND	380	190

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	81	25-144
2-FLUOROBIPHENYL	66	34-135
2-FLUOROPHENOL	67	23-135
NITROBENZENE-D5	67	25-135
PHENOL-D5	73	25-135
TERPHENYL-D14	76	32-136

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No.: 02I146 Date Extracted: 09/23/02 18:00
 Sample ID: 818655-B3100 Date Analyzed: 09/24/02 18:26
 Lab Samp ID: I146-11 Dilution Factor: 1
 Lab File ID: RIX223 Matrix : SOIL
 Ext Btch ID: SVI036S % Moisture : 6.3
 Calib. Ref.: RHX056 Instrument ID : T-042
 =====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	350	180
1,2-DICHLOROBENZENE	ND	350	180
1,3-DICHLOROBENZENE	ND	350	180
1,4-DICHLOROBENZENE	ND	350	180
2,4,5-TRICHLOROPHENOL	ND	890	180
2,4,6-TRICHLOROPHENOL	ND	350	180
2,4-DICHLOROPHENOL	ND	350	180
2,4-DIMETHYLPHENOL	ND	350	180
2,4-DINITROPHENOL	ND	890	180
2,4-DINITROTOLUENE	ND	350	180
2,6-DINITROTOLUENE	ND	350	180
2-CHLORONAPHTHALENE	ND	350	180
2-CHLOROPHENOL	ND	350	180
2-METHYLNAPHTHALENE	ND	350	180
2-METHYLPHENOL	ND	350	180
2-NITROANILINE	ND	890	180
2-NITROPHENOL	ND	350	180
3,3'-DICHLOROBENZIDINE	ND	350	180
3-NITROANILINE	ND	890	180
4,6-DINITRO-2-METHYLPHENOL	ND	890	180
4-BROMOPHENYL-PHENYL ETHER	ND	350	180
4-CHLORO-3-METHYLPHENOL	ND	350	180
4-CHLOROANILINE	ND	350	180
4-CHLOROPHENYL-PHENYL ETHER	ND	350	180
4-METHYLPHENOL (1)	ND	350	180
4-NITROANILINE	ND	890	180
4-NITROPHENOL	ND	890	180
ACENAPHTHENE	ND	350	180
ACENAPHTHYLENE	ND	350	180
ANTHRACENE	ND	350	180
BENZO(A)ANTHRACENE	ND	350	180
BENZO(B)FLUORANTHENE	ND	350	180
BENZO(K)FLUORANTHENE	ND	350	180
BENZO(G,H,I)PERYLENE	ND	350	180
BIS(2-CHLOROETHOXY)METHANE	ND	350	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	350	180
BIS(2-ETHYLHEXYL)PHTHALATE	ND	350	180
BUTYLBENZYLPHthalate	ND	350	180
CHRYSENE	ND	350	180
DI-N-BUTYLPHthalate	ND	350	180
DI-N-OCTYLPHthalate	ND	350	180
DIBENZOFURAN	ND	350	180
DIETHYLPHthalate	ND	350	180
DIMETHYLPHthalate	ND	350	180
FLUORANTHENE	ND	350	180
FLUORENE	ND	350	180
HEXAChLOROBUTADIENE	ND	350	180
HEXAChLOROCYCLOPENTADIENE	ND	350	180
HEXAChLOROETHANE	ND	350	180
N-NITROSODIPHENYLAMINE (2)	ND	350	180
NAPHTHALENE	ND	350	180
NITROBENZENE	ND	350	180
PENTACHLOROPHENOL	ND	210	180
PHENANTHRENE	ND	350	180
PHENOL	ND	350	180
PYRENE	ND	350	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	80	25-144
2-FLUOROBIPHENYL	64	34-135
2-FLUOROPHENOL	64	25-135
NITROBENZENE-D5	66	25-135
PHENOL-D5	70	25-135
TERPHENYL-D14	71	32-136

RL: Reporting Limit  
(1): Cannot be separated from 3-Methylphenol  
(2): Cannot be separated from Diphenylamine

3010

SW 3550B/8270C  
SEMI VOLATILE ORGANICS BY GC/MS

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No. : 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3101	Date Analyzed: 09/24/02 18:58
Lab Samp ID: I146-12	Dilution Factor: 1
Lab File ID: RIX224	Matrix : SOIL
Ext Btch ID: SVI036S	% Moisture : 7.3
Calib. Ref.: RHX056	Instrument ID : T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	360	180
1,2-DICHLOROBENZENE	ND	360	180
1,3-DICHLOROBENZENE	ND	360	180
1,4-DICHLOROBENZENE	ND	360	180
2,4,5-TRICHLOROPHENOL	ND	900	180
2,4,6-TRICHLOROPHENOL	ND	360	180
2,4-DICHLOROPHENOL	ND	360	180
2,4-DIMETHYLPHENOL	ND	360	180
2,4-DINITROPHENOL	ND	900	180
2,4-DINITROTOLUENE	ND	360	180
2,6-DINITROTOLUENE	ND	360	180
2-CHLORONAPHTHALENE	ND	360	180
2-CHLOROPHENOL	ND	360	180
2-METHYLNAPHTHALENE	ND	360	180
2-METHYLPHENOL	ND	360	180
2-NITROANILINE	ND	900	180
2-NITROPHENOL	ND	360	180
3,3'-DICHLOROBENZIDINE	ND	360	180
3-NITROANILINE	ND	900	180
4,6-DINITRO-2-METHYLPHENOL	ND	900	180
4-BROMOPHENYL-PHENYL ETHER	ND	360	180
4-CHLORO-3-METHYLPHENOL	ND	360	180
4-CHLOROANILINE	ND	360	180
4-CHLOROPHENYL-PHENYL ETHER	ND	360	180
4-METHYLPHENOL (1)	ND	360	180
4-NITROANILINE	ND	900	180
4-NITROPHENOL	ND	900	180
ACENAPHTHENE	ND	360	180
ACENAPHTHYLENE	ND	360	180
ANTHRACENE	ND	360	180
BENZO(A)ANTHRACENE	ND	360	180
BENZO(B)FLUORANTHENE	ND	360	180
BENZO(K)FLUORANTHENE	ND	360	180
BENZO(G,H,I)PERYLENE	ND	360	180
BIS(2-CHLOROETHOXY)METHANE	ND	360	180
BIS(2-CHLOROISOPROPYL)ETHER	ND	360	180
BUTYLBENZYLPHthalate	ND	360	180
CHRYSENE	ND	360	180
DI-N-BUTYLPHthalate	ND	360	180
DI-N-OCTYLPHthalate	ND	360	180
DIBENZOFURAN	ND	360	180
DIETHYLPHthalate	ND	360	180
DIMETHYLPHthalate	ND	360	180
FLUORANTHENE	ND	360	180
FLUORENE	ND	360	180
HEXAChLOROBUTADIENE	ND	360	180
HEXAChLOROCYCLOPENTADIENE	ND	360	180
HEXAChLOROETHANE	ND	360	180
N-NITROSODIPHENYLAMINE (2)	ND	360	180
NAPHTHALENE	ND	360	180
NITROBENZENE	ND	360	180
PENTACHLOROPHENOL	ND	220	180
PHENANTHRENE	ND	360	180
PHENOL	ND	360	180
PYRENE	ND	360	180

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	79	25-144
2-FLUOROBIPHENYL	66	34-135
2-FLUOROPHENOL	64	25-135
NITROBENZENE-D5	65	25-135
PHENOL-D5	71	25-135
TERPHENYL-D14	79	32-136

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

3011

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No.: 02I146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-B3091 Date Analyzed: 09/24/02 17:05  
Lab Samp ID: I146-02 Dilution Factor: 1  
Lab File ID: RIZ357 Matrix : SOIL  
Ext Btch ID: SVI036S % Moisture : 8.5  
Calib. Ref.: RH2077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	36	11
BIS(2-CHLOROETHYL)ETHER	ND	36	16
DIBENZO(A,H)ANTHRACENE	ND	36	11
HEXACHLOROBENZENE	ND	82	11
INDENO(1,2,3-CD)PYRENE	ND	38	11
N-NITROSO-DI-N-PROPYLAMINE	ND	36	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	90	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

3043

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No. : 02I146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-B3092 Date Analyzed: 09/24/02 17:35  
Lab Samp ID: I146-03 Dilution Factor: 1  
Lab File ID: RIZ358 Matrix : SOIL  
Ext Btch ID: SVI036S % Moisture : 9.2  
Calib. Ref.: RHZ077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	36	11
BIS(2-CHLOROETHYL)ETHER	ND	36	17
DIBENZO(A,H)ANTHRACENE	ND	36	11
HEXACHLOROBENZENE	ND	83	11
INDENO(1,2,3-CD)PYRENE	ND	39	11
N-NITROSO-DI-N-PROPYLAMINE	ND	36	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	95	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

3044

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No. : 02I146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-B3093 Date Analyzed: 09/24/02 18:08  
Lab Samp ID: I146-04 Dilution Factor: 1  
Lab File ID: R1Z359 Matrix : SOIL  
Ext Btch ID: SV1036S % Moisture : 8.2  
Calib. Ref.: RHZ077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	36	11
BIS(2-CHLOROETHYL)ETHER	ND	36	16
DIBENZO(A,H)ANTHRACENE	ND	36	11
HEXACHLOROBENZENE	ND	82	11
INDENO(1,2,3-CD)PYRENE	ND	38	11
N-NITROSO-DI-N-PROPYLAMINE	ND	36	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	96	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No. : 021146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3094	Date Analyzed: 09/24/02 18:38
Lab Samp ID: I146-05	Dilution Factor: 1
Lab File ID: RIZ360	Matrix : SOIL
Ext Btch ID: SVI036S	% Moisture : 6.2
Calib. Ref.: RHZ077	Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	35	11
BIS(2-CHLOROETHYL)ETHER	ND	35	16
DIBENZO(A,H)ANTHRACENE	ND	35	11
HEXACHLOROBENZENE	ND	80	11
INDENO(1,2,3-CD)PYRENE	ND	37	11
N-NITROSO-DI-N-PROPYLAMINE	ND	35	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	86	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

3046

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No.: 021146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-B3095 Date Analyzed: 09/24/02 19:08  
Lab Samp ID: I146-06 Dilution Factor: 1  
Lab File ID: RIZ361 Matrix : SOIL  
Ext Btch ID: SV1036S % Moisture : 10.6  
Calib. Ref.: RHZ077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	37	11
BIS(2-CHLOROETHYL)ETHER	ND	37	17
DIBENZO(A,H)ANTHRACENE	ND	37	11
HEXACHLOROBENZENE	ND	84	11
INDENO(1,2,3-CD)PYRENE	ND	39	11
N-NITROSO-DI-N-PROPYLAMINE	ND	37	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	96	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No.: 02I146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-B3096 Date Analyzed: 09/25/02 12:27  
Lab Samp ID: I146-07R Dilution Factor: 1  
Lab File ID: RIZ373 Matrix : SOIL  
Ext Btch ID: SVI036S % Moisture : 13.0  
Calib. Ref.: RHZ077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	38	11
BIS(2-CHLOROETHYL)ETHER	ND	38	17
DIBENZO(A,H)ANTHRACENE	ND	38	11
HEXACHLOROBENZENE	ND	86	11
INDENO(1,2,3-CD)PYRENE	ND	40	11
N-NITROSO-DI-N-PROPYLAMINE	ND	38	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	81	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No.: 02I146	Date Extracted: 09/23/02 18:00
Sample ID: 818655-B3100	Date Analyzed: 09/25/02 12:57
Lab Samp ID: I146-11R	Dilution Factor: 1
Lab File ID: R12374	Matrix : SOIL
Ext Btch ID: SV1036S	% Moisture : 6.3
Calib. Ref.: RHZ077	Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	35	11
BIS(2-CHLOROETHYL)ETHER	ND	35	16
DIBENZO(A,H)ANTHRACENE	ND	35	11
HEXACHLOROBENZENE	ND	80	11
INDENO(1,2,3-CD)PYRENE	ND	37	11
N-NITROSO-DI-N-PROPYLAMINE	ND	35	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	77	32-136	

RL: Reporting Limit

- (1): Cannot be separated from 3-Methylphenol  
(2): Cannot be separated from Diphenylamine

3049

SW 3550B/8270C SIM  
SEMI VOLATILE ORGANICS BY GC/MS/SIM

=====

Client : SHAW E&I Date Collected: 09/19/02  
Project : CTO 0024, EL TORO Date Received: 09/19/02  
Batch No. : 021146 Date Extracted: 09/23/02 18:00  
Sample ID: 818655-83101 Date Analyzed: 09/25/02 13:27  
Lab Samp ID: 1146-12R Dilution Factor: 1  
Lab File ID: RIZ375 Matrix : SOIL  
Ext Btch ID: SVI036S % Moisture : 7.3  
Calib. Ref.: RH2077 Instrument ID : T-048

=====

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	36	11
BIS(2-CHLOROETHYL)ETHER	ND	36	16
DIBENZO(A,H)ANTHRACENE	ND	36	11
HEXACHLOROBENZENE	ND	81	11
INDENO(1,2,3-CD)PYRENE	ND	38	11
N-NITROSO-DI-N-PROPYLAMINE	ND	36	11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TERPHENYL-D14	86	32-136	

RL: Reporting Limit

(1): Cannot be separated from 3-Methylphenol

(2): Cannot be separated from Diphenylamine

**METHOD 5030B/M8015**  
**TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP**

Client : SHAW E&I  
 Project : CTO 0024, EL TORO  
 Batch No. : 021146

Matrix : WATER  
 Instrument ID : GCT039

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	L.FID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
NBLK1W	VA39148B	ND	91	1	NA	.1	.005	09/21/0223:22	E121017A	E121013A	VA39148	NA	09/21/02
LCS1W	VA39148L	.514	122	1	NA	.1	.005	09/21/0223:57	E121018A	E121013A	VA39148	NA	09/21/02
LCD1W	VA39148C	.476	111	1	NA	.1	.005	09/22/0200:31	E121019A	E121013A	VA39148	NA	09/22/02
818655-B3102	1146-13	.021J	92	1	NA	.1	.005	09/22/0203:21	E121024A	E121013A	VA39148	09/19/02	

RL : Reporting Limit

4004

METHOD 5035/M8015  
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : SHAW E&I  
Project : CTO 0024, EL TORC  
Batch No. : 021146

Matrix : SOIL  
Instrument ID : GCT039

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/kg)	SURR (%)	DLF MOIST (mg/kg)	RL	MDL (mg/kg)	Analysis DATETIME	Extraction DATETIME	L.FID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
NBLK1S	VM39143B	ND	100	1	NA	10	.524	09/21/0215:27	E121003A	E121002A	VM39143	NA	09/21/02
LCS1S	VM39143L	30.1	120	1	NA	10	.524	09/21/0216:01	E121004A	E121002A	VM39143	NA	09/21/02
LCD1S	VM39143C	29.5	119	1	NA	10	.524	09/21/0216:35	E121005A	E121002A	VM39143	NA	09/21/02
818655-B3091	I146-02	ND	98	1.67	8.5	18	.96	09/21/0217:43	E121007A	E121002A	VM39143	09/19/02	09/19/02
818655-B3092	I146-03	ND	99	.89	9.2	9.8	.51	09/21/0218:17	E121008A	E121002A	VM39143	09/19/02	09/19/02
818655-B3093	I146-04	ND	97	1.09	8.2	12	.62	09/21/0218:51	E121009A	E121002A	VM39143	09/19/02	09/19/02
818655-B3094	I146-05	ND	94	.98	6.2	10	.55	09/21/0219:25	E121010A	E121002A	VM39143	09/19/02	09/19/02
818655-B3095	I146-06	ND	94	.85	10.6	9.5	.5	09/21/0219:59	E121011A	E121002A	VM39143	09/19/02	09/19/02
818655-B3096	I146-07	ND	94	.85	13.0	9.8	.51	09/21/0220:33	E121012A	E121002A	VM39143	09/19/02	09/19/02
818655-B3100	I146-11	ND	77	.93	6.3	9.9	.52	09/21/0222:14	E121015A	E121015A	VM39143	09/19/02	09/19/02
818655-B3101	I146-12	ND	89	.93	7.3	10	.53	09/21/0222:48	E121016A	E121013A	VM39143	09/19/02	09/19/02

RL = Reporting Limit  
Methanol Extraction : 09/20/02 16:00

4005

**METHOD 3520C/M8015**  
**TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION**

Client : SHAW E&I                                  Matrix : WATER  
 Project : CTO 0024, EL TORO                          Instrument ID : GCT050  
 Batch No. : 021146

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SUR1 (%)	SUR2 (%)	DLF MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATE/TIME	Extraction DATE/TIME	LFID	CAL REF	Collection DATE/TIME	PREP BATCH	Received DATE/TIME
MBLK1W	DS1028WB	ND	105	125	1	NA	.1	09/24/0223:30	09/24/0212:00	T123046A	DS1028W	NA	09/24/02	
LCS1W	DS1028WL	5.16	113	134	1	NA	.1	09/25/0200:19	09/24/0212:00	T123047A	DS1028W	NA	09/24/02	
LCD1W	DS1028WY	4.97	106	116	1	NA	.1	09/25/0211:47	09/24/0212:00	T125004A	DS1028W	NA	09/24/02	
818655-B3102	11146-13	ND	119	135	.94	NA	.094	09/25/0201:57	09/24/0212:00	T123049A	DS1028W	09/19/02	09/19/02	

RL : Reporting Limit

SURR1 : Bromobenzene

SURR2 : Hexacosane

Parameter H-C Range  
diesel C10-C38

CA LUFT/M8015  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : SHAW E&I  
Project : CTO 0024, EL TORO  
Batch No. : 021146

Matrix : SOIL  
Instrument ID : GCT043

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/kg)	SUR1 (%)	SUR2 (%)	RL	MDL (mg/kg)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME	
MBLK1S	DS1029SB	ND	101	86	1	NA	10	4	09/25/0212:46	09/23/0217:00	D125005A	D125002A	DS1029S	NA
LCS1S	DS1029SL	469	95	77	1	NA	10	4	09/25/0213:32	09/23/0217:00	D125006A	D125002A	DS1029S	09/23/02
818655-B3091	I146-02	ND	101	88	1	8.5	11	4.4	09/25/0214:17	09/23/0217:00	D125007A	D125002A	DS1029S	09/19/02
818655-B3092	I146-03	ND	96	81	1	9.2	11	4.4	09/25/0215:03	09/23/0217:00	D125008A	D125002A	DS1029S	09/19/02
818655-B3093	I146-04	ND	91	74	1	8.2	11	4.4	09/25/0215:48	09/23/0217:00	D125009A	D125002A	DS1029S	09/19/02
818655-B3094	I146-05	ND	103	81	1	6.2	11	4.3	09/25/0216:34	09/23/0217:00	D125010A	D125002A	DS1029S	09/19/02
818655-B3095	I146-06	ND	91	70	1	10.6	11	4.5	09/25/0217:20	09/23/0217:00	D125011A	D125002A	DS1029S	09/19/02
818655-B3096	I146-07	ND	92	71	1	13.0	11	4.6	09/25/0218:05	09/23/0217:00	D125012A	D125002A	DS1029S	09/19/02
818655-B3100	I146-11	ND	91	67	1	6.3	11	4.3	09/25/0218:51	09/23/0217:00	D125013A	D125002A	DS1029S	09/19/02
818655-B3101	I146-12	7.2J	101	75	1	7.3	11	4.3	09/25/0221:07	09/23/0217:00	D125016A	D125014A	DS1029S	09/19/02
818655-B3101MS	I146-12M	461	94	68	1	7.3	10.8	4.31	09/25/0221:53	09/23/0217:00	D125017A	D125014A	DS1029S	09/19/02
818655-B3101MSD	I146-12S	472	91	68	1	7.3	10.8	4.31	09/25/0222:38	09/23/0217:00	D125018A	D125014A	DS1029S	09/19/02

RL Reporting Limit

SUR1 Bromobenzene

SUR2 Hexacosane

Parameter H-C Range  
Diesel C10-C38

5005

SW3550B/8081A  
PESTICIDES

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 16:30
 Sample ID: 818655-B3091 Date Analyzed: 09/24/02 21:39
 Lab Samp ID: I146-02 Dilution Factor: 1
 Lab File ID: SI24018A Matrix : SOIL
 Ext Btch ID: CPI038S % Moisture : 8.5
 Calib. Ref.: SI24003A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
ALPHA-BHC	(ND)	ND	.0022	.00022
GAMMA-BHC (LINDANE)	(ND)	ND	.0022	.00022
BETA-BHC	(ND)	ND	.0022	.00022
HEPTACHLOR	(ND)	ND	.0022	.0011
DELTA-BHC	(ND)	ND	.0022	.00022
ALDRIN	(ND)	ND	.0022	.00055
HEPTACHLOR EPOXIDE	(ND)	ND	.0022	.00022
GAMMA-CHLORDANE	(ND)	ND	.0022	.00022
ALPHA-CHLORDANE	(ND)	ND	.0022	.00022
ENDOSULFAN I	(ND)	ND	.0044	.0011
4,4'-DDE	(ND)	ND	.0044	.0011
DIELDRIN	(ND)	ND	.0044	.00055
ENDRIN	(ND)	ND	.0033	.0011
4,4'-DDD	(ND)	ND	.0044	.0011
ENDOSULFAN II	(ND)	ND	.0044	.00055
4,4'-DDT	(ND)	ND	.0044	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0044	.00055
ENDOSULFAN SULFATE	(ND)	ND	.0044	.00055
ENDRIN KETONE	(ND)	ND	.0033	.0011
METHOXYPHORON	(ND)	ND	.022	.0044
TOXAPHENE	(ND)	ND	.11	.0087
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(96)	86	35-135	
DECACHLOROBIPHENYL	(97)	91	25-143	

RL : Reporting limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

SW3550B/8081A  
PESTICIDES

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 021146 Date Extracted: 09/24/02 16:30
 Sample ID: 818655-B3092 Date Analyzed: 09/24/02 22:05
 Lab Samp ID: I146-03 Dilution Factor: 1
 Lab File ID: SI24019A Matrix : SOIL
 Ext Btch ID: CPI038S % Moisture : 9.2
 Calib. Ref.: SI24003A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL	MDL
	(mg/kg)		(mg/kg)	(mg/kg)
ALPHA-BHC	(ND)	ND	.0022	.00022
GAMMA-BHC (LINDANE)	(ND)	ND	.0022	.00022
BETA-BHC	(ND)	ND	.0022	.00022
HEPTACHLOR	(ND)	ND	.0022	.0011
DELTA-BHC	(ND)	ND	.0022	.00022
ALDRIN	(ND)	ND	.0022	.00055
HEPTACHLOR EPOXIDE	(ND)	ND	.0022	.00022
GAMMA-CHLORDANE	(ND)	ND	.0022	.00022
ALPHA-CHLORDANE	(ND)	ND	.0022	.00022
ENDOSULFAN I	(ND)	ND	.0044	.0011
4,4'-DDE	(ND)	ND	.0044	.0011
DIELDRIN	(ND)	ND	.0044	.00055
ENDRIN	(ND)	ND	.0033	.0011
4,4'-DDD	(ND)	ND	.0044	.0011
ENDOSULFAN II	(ND)	ND	.0044	.00055
4,4'-DDT	(ND)	ND	.0044	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0044	.00055
ENDOSULFAN SULFATE	(ND)	ND	.0044	.00055
ENDRIN KETONE	(ND)	ND	.0033	.0011
METHOXYPHENYL	(ND)	ND	.022	.0044
TOXAPHENE	(ND)	ND	.11	.0088
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(87)	79	35-135	
DECACHLOROBIPHENYL	(99)	93	25-143	

RL : Reporting limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column

SW3550B/8081A  
PESTICIDES

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3093 Date Analyzed: 09/24/02 22:30  
 Lab Samp ID: 1146-04 Dilution Factor: 1  
 Lab File ID: SI24020A Matrix : SOIL  
 Ext Btch ID: CP1038S % Moisture : 8.2  
 Calib. Ref.: SI24003A Instrument ID : GCT008

=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(mg/kg)	ND		
ALPHA-BHC	(ND)	ND	.0022	.00022
GAMMA-BHC (LINDANE)	(ND)	ND	.0022	.00022
BETA-BHC	(ND)	ND	.0022	.00022
HEPTACHLOR	(ND)	ND	.0022	.0011
DELTA-BHC	(ND)	ND	.0022	.00022
ALDRIN	(ND)	ND	.0022	.00054
HEPTACHLOR EPOXIDE	(ND)	ND	.0022	.00022
GAMMA-CHLORDANE	(ND)	ND	.0022	.00022
ALPHA-CHLORDANE	(ND)	ND	.0022	.00022
ENDOSULFAN I	(ND)	ND	.0044	.0011
4,4'-DDE	(ND)	ND	.0044	.0011
DIELDRIN	(ND)	ND	.0044	.00054
ENDRIN	(ND)	ND	.0033	.0011
4,4'-DDD	(ND)	ND	.0044	.0011
ENDOSULFAN II	(ND)	ND	.0044	.00054
4,4'-DDT	(ND)	ND	.0044	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0044	.00054
ENDOSULFAN SULFATE	(ND)	ND	.0044	.00054
ENDRIN KETONE	(ND)	ND	.0033	.0011
METHOXYPYRROLE	(ND)	ND	.022	.0044
TOXAPHENE	(ND)	ND	.11	.0087

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(92) 84	35-135
DECACHLOROBIPHENYL	(99) 93	25-143

RL : Reporting limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column

SW3550B/8081A  
PESTICIDES

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 02I146 Date Extracted: 09/24/02 16:30
 Sample ID: 818655-B3094 Date Analyzed: 09/24/02 22:55
 Lab Samp ID: I146-05 Dilution Factor: 1
 Lab File ID: SI24021A Matrix : SOIL
 Ext Btch ID: CPI038S % Moisture : 6.2
 Calib. Ref.: SI24003A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL	MDL
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
ALPHA-BHC	(ND)	ND	.0021	.00021
GAMMA-BHC (LINDANE)	(ND)	ND	.0021	.00021
BETA-BHC	(ND)	ND	.0021	.00021
HEPTACHLOR	(ND)	ND	.0021	.0011
DELTA-BHC	(ND)	ND	.0021	.00021
ALDRIN	(ND)	ND	.0021	.00053
HEPTACHLOR EPOXIDE	(ND)	ND	.0021	.00021
GAMMA-CHLORDANE	(ND)	ND	.0021	.00021
ALPHA-CHLORDANE	(ND)	ND	.0021	.00021
ENDOSULFAN I	(ND)	ND	.0043	.0011
4,4'-DDE	(ND)	ND	.0043	.0011
DIELDRIN	(ND)	ND	.0043	.00053
ENDRIN	(ND)	ND	.0032	.0011
4,4'-DDD	(ND)	ND	.0043	.0011
ENDOSULFAN II	(ND)	ND	.0043	.00053
4,4'-DDT	(ND)	ND	.0043	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0043	.00053
ENDOSULFAN SULFATE	(ND)	ND	.0043	.00053
ENDRIN KETONE	(ND)	ND	.0032	.0011
METHOXYPHORON	(ND)	ND	.021	.0043
TOXAPHENE	(ND)	ND	.11	.0085

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(94) 87	35-135
DECACHLOROBIPHENYL	(100) 93	25-143

RL : Reporting limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column

5101

SW3550B/8081A  
PESTICIDES

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 Batch No. : 02I146 Date Extracted: 09/24/02 16:30
 Sample ID: 818655-B3095 Date Analyzed: 09/24/02 23:20
 Lab Samp ID: I146-06 Dilution Factor: 1
 Lab File ID: SI24022A Matrix : SOIL
 Ext Btch ID: CPI038S % Moisture : 10.6
 Calib. Ref.: SI24003A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
ALPHA-BHC	(ND)	ND	.0022	.00022
GAMMA-BHC (LINDANE)	(ND)	ND	.0022	.00022
BETA-BHC	(ND)	ND	.0022	.00022
HEPTACHLOR	(ND)	ND	.0022	.0011
DELTA-BHC	(ND)	ND	.0022	.00022
ALDRIN	(ND)	ND	.0022	.00056
HEPTACHLOR EPOXIDE	(ND)	ND	.0022	.00022
GAMMA-CHLORDANE	(ND)	ND	.0022	.00022
ALPHA-CHLORDANE	(ND)	ND	.0022	.00022
ENDOSULFAN I	(ND)	ND	.0045	.0011
4,4'-DDE	(ND)	ND	.0045	.0011
DIELDRIN	(ND)	ND	.0045	.00056
ENDRIN	(ND)	ND	.0034	.0011
4,4'-DDD	(ND)	ND	.0045	.0011
ENDOSULFAN II	(ND)	ND	.0045	.00056
4,4'-DDT	(ND)	ND	.0045	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0045	.00056
ENDOSULFAN SULFATE	(ND)	ND	.0045	.00056
ENDRIN KETONE	(ND)	ND	.0034	.0011
METHOXYPHORON	(ND)	ND	.022	.0045
TOXAPHENE	(ND)	ND	.11	.0089
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(89)	83	35-135	
DECACHLOROBIPHENYL	(99)	92	25-143	

RL : Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

SW3550B/8081A  
PESTICIDES

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No. : 02I146	Date Extracted: 09/24/02 16:30
Sample ID: 818655-B3096	Date Analyzed: 09/24/02 23:46
Lab Samp ID: I146-07	Dilution Factor: 1
Lab File ID: S124023A	Matrix : SOIL
Ext Btch ID: CPI038S	% Moisture : 13.0
Calib. Ref.: S124003A	Instrument ID : GCT008

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
ALPHA-BHC	(ND)	ND	.0023	.00023
GAMMA-BHC (LINDANE)	(ND)	ND	.0023	.00023
BETA-BHC	(ND)	ND	.0023	.00023
HEPTACHLOR	(ND)	ND	.0023	.0011
DELTA-BHC	(ND)	ND	.0023	.00023
ALDRIN	(ND)	ND	.0023	.00057
HEPTACHLOR EPOXIDE	(ND)	ND	.0023	.00023
GAMMA-CHLORDANE	(ND)	ND	.0023	.00023
ALPHA-CHLORDANE	(ND)	ND	.0023	.00023
ENDOSULFAN I	(ND)	ND	.0046	.0011
4,4'-DDE	(ND)	ND	.0046	.0011
DIELDRIN	(ND)	ND	.0046	.00057
ENDRIN	(ND)	ND	.0034	.0011
4,4'-DDD	(ND)	ND	.0046	.0011
ENDOSULFAN II	(ND)	ND	.0046	.00057
4,4'-DDT	(ND)	ND	.0046	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0046	.00057
ENDOSULFAN SULFATE	(ND)	ND	.0046	.00057
ENDRIN KETONE	(ND)	ND	.0034	.0011
METHOXYPHOR	(ND)	ND	.023	.0046
TOXAPHENE	(ND)	ND	.11	.0092
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(97)	89	35-135	
DECACHLOROBIPHENYL	(98)	92	25-143	

RL : Reporting Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550B/8081A  
PESTICIDES

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
Batch No. : 021146 Date Extracted: 09/24/02 16:30
Sample ID: 818655-B3100 Date Analyzed: 09/25/02 00:11
Lab Samp ID: I146-11 Dilution Factor: 1
Lab File ID: SI24024A Matrix : SOIL
Ext Btch ID: CPI038S % Moisture : 6.3
Calib. Ref.: SI24003A Instrument ID : GCT008
=====
```

PARAMETERS	RESULTS		RL	MDL
	(mg/kg)		(mg/kg)	(mg/kg)
ALPHA-BHC	(ND)	ND	.0021	.00021
GAMMA-BHC (LINDANE)	(ND)	ND	.0021	.00021
BETA-BHC	(ND)	ND	.0021	.00021
HEPTACHLOR	(ND)	ND	.0021	.0011
DELTA-BHC	(ND)	ND	.0021	.00021
ALDRIN	(ND)	ND	.0021	.00053
HEPTACHLOR EPOXIDE	(ND)	ND	.0021	.00021
GAMMA-CHLORDANE	(ND)	ND	.0021	.00021
ALPHA-CHLORDANE	(ND)	ND	.0021	.00021
ENDOSULFAN I	(ND)	ND	.0043	.0011
4,4'-DDE	(ND)	ND	.0043	.0011
DIELDRIN	(ND)	ND	.0043	.00053
ENDRIN	(ND)	ND	.0032	.0011
4,4'-DDD	(ND)	ND	.0043	.0011
ENDOSULFAN II	(ND)	ND	.0043	.00053
4,4'-DDT	(ND)	ND	.0043	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0043	.00053
ENDOSULFAN SULFATE	(ND)	ND	.0043	.00053
ENDRIN KETONE	(ND)	ND	.0032	.0011
METHOXYPHOR	(ND)	ND	.021	.0043
TOXAPHENE	(ND)	ND	.11	.0085

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(97) 89	35-135
DECACHLOROBIPHENYL	(95) 89	25-143

RL : Reporting limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column

SW3550B/8081A  
PESTICIDES

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
Batch No. : 02I146 Date Extracted: 09/24/02 16:30
Sample ID: 818655-B3101 Date Analyzed: 09/25/02 00:36
Lab Samp ID: I146-12 Dilution Factor: 1
Lab File ID: SI24025A Matrix : SOIL
Ext Btch ID: CP1038S % Moisture : 7.3
Calib. Ref.: SI24003A Instrument ID : GCT008
=====
```

PARAMETERS	RESULTS		RL	MDL
	(mg/kg)		(mg/kg)	(mg/kg)
ALPHA-BHC	(ND)	ND	.0022	.00022
GAMMA-BHC (LINDANE)	(ND)	ND	.0022	.00022
BETA-BHC	(ND)	ND	.0022	.00022
HEPTACHLOR	(ND)	ND	.0022	.0011
DELTA-BHC	(ND)	ND	.0022	.00022
ALDRIN	(ND)	ND	.0022	.00054
HEPTACHLOR EPOXIDE	(ND)	ND	.0022	.00022
GAMMA-CHLORDANE	(ND)	ND	.0022	.00022
ALPHA-CHLORDANE	(ND)	ND	.0022	.00022
ENDOSULFAN I	(ND)	ND	.0043	.0011
4,4'-DDE	(ND)	ND	.0043	.0011
DIELDRIN	(ND)	ND	.0043	.00054
ENDRIN	(ND)	ND	.0032	.0011
4,4'-DDD	(ND)	ND	.0043	.0011
ENDOSULFAN II	(ND)	ND	.0043	.00054
4,4'-DDT	(ND)	ND	.0043	.0011
ENDRIN ALDEHYDE	(ND)	ND	.0043	.00054
ENDOSULFAN SULFATE	(ND)	ND	.0043	.00054
ENDRIN KETONE	(ND)	ND	.0032	.0011
METHOXYPYCHLOR	(ND)	ND	.022	.0043
TOXAPHENE	(ND)	ND	.11	.0086

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(82)   74	35-135
DECACHLOROBIPHENYL	(94)   88	25-143

RL : Reporting limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column

5105

SW3520C/8081A  
PESTICIDES

Client : SHAW E&I	Date Collected: 09/19/02
Project : CTO 0024, EL TORO	Date Received: 09/19/02
Batch No. : 02I146	Date Extracted: 09/24/02 12:00
Sample ID: 818655-B3102	Date Analyzed: 09/24/02 19:07
Lab Samp ID: I146-13	Dilution Factor: .97
Lab File ID: SI24012A	Matrix : WATER
Ext Btch ID: CPI037W	% Moisture : NA
Calib. Ref.: SI24003A	Instrument ID : GCT008

PARAMETERS	RESULTS		RL	MDL
	(ug/L)	(ug/L)	(ug/L)	(ug/L)
ALPHA-BHC	(ND)	ND	.097	.0097
GAMMA-BHC (LINDANE)	(ND)	ND	.097	.0097
BETA-BHC	(ND)	ND	.097	.0097
HEPTACHLOR	(ND)	.046J	.097	.0097
DELTA-BHC	(ND)	ND	.097	.0097
ALDRIN	(ND)	ND	.097	.0097
HEPTACHLOR EPOXIDE	(ND)	ND	.097	.0097
GAMMA-CHLORDANE	(ND)	ND	.097	.0097
ALPHA-CHLORDANE	(ND)	ND	.097	.0097
ENDOSULFAN I	.38	(ND)	.097	.029
4,4'-DDE	(ND)	.43	.19	.029
DIELDRIN	(ND)	ND	.19	.097
ENDRIN	(ND)	ND	.097	.0097
4,4'-DDD	(ND)	ND	.19	.029
ENDOSULFAN II	(ND)	ND	.19	.0097
4,4'-DDT	(ND)	ND	.19	.019
ENDRIN ALDEHYDE	(ND)	ND	.19	.0097
ENDOSULFAN SULFATE	(ND)	ND	.19	.0097
ENDRIN KETONE	(ND)	ND	.097	.0097
METHOXYPHOR	(ND)	ND	.97	.097
TOXAPHENE	(ND)		2.9	1.2
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(105)	93	45-125	
DECACHLOROBIPHENYL	110	(108)	34-133	

RL : Reporting limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3091 Date Analyzed: 09/24/02 21:39  
 Lab Samp ID: I146-02 Dilution Factor: 1  
 Lab File ID: SI24018A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 8.5  
 Calib. Ref.: SI24006A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.055	.018
PCB-1221	(ND)	ND	.055	.018
PCB-1232	(ND)	ND	.055	.018
PCB-1242	(ND)	ND	.055	.018
PCB-1248	(ND)	ND	.055	.018
PCB-1254	(ND)	ND	.055	.018
PCB-1260	(ND)	ND	.055	.018

SURROGATE PARAMETERS	% RECOVERY		QC LIMIT
	(93)	87	
TETRACHLORO-M-XYLENE	(95)	88	35-135
DECACHLOROBIPHENYL			25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

() included the reported column

\* Out side of QC Limit

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
Batch No.   : 02I146           Date Extracted: 09/24/02 16:30
Sample ID: 818655-B3092       Date Analyzed: 09/24/02 22:05
Lab Samp ID: I146-03         Dilution Factor: 1
Lab File ID: SI24019A         Matrix      : SOIL
Ext Btch ID: CP1038S          % Moisture   : 9.2
Calib. Ref.: SI24006A         Instrument ID : GCT008
=====
```

PARAMETERS	RESULTS		MDL (mg/kg)
	(mg/kg)	RL -----	
PCB-1016	(ND) ND	.055	.018  .018
PCB-1221	(ND) ND	.055	.018  .018
PCB-1232	(ND) ND	.055	.018  .018
PCB-1242	(ND) ND	.055	.018  .018
PCB-1248	(ND) ND	.055	.018  .018
PCB-1254	(ND) ND	.055	.018  .018
PCB-1260	(ND) ND	.055	.018  .018

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(85) 80	35-135
DECACHLOROBIPHENYL	(97) 90	25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW3550B/8082

PCBs

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
Batch No. : 02I146 Date Extracted: 09/24/02 16:30
Sample ID: 818655-B3093 Date Analyzed: 09/24/02 22:30
Lab Samp ID: I146-04 Dilution Factor: 1
Lab File ID: SI24020A Matrix : SOIL
Ext Btch ID: CPI038S % Moisture : 8.2
Calib. Ref.: SI24006A Instrument ID : GCT008
=====
```

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.054	.018
PCB-1221	(ND)	ND	.054	.018
PCB-1232	(ND)	ND	.054	.018
PCB-1242	(ND)	ND	.054	.018
PCB-1248	(ND)	ND	.054	.018
PCB-1254	(ND)	ND	.054	.018
PCB-1260	(ND)	ND	.054	.018

SURROGATE PARAMETERS	% RECOVERY		QC LIMIT
	(89)	85	
TETRACHLORO-M-XYLENE	(89)	85	35-135
DECACHLOROBIPHENYL	(97)	90	25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

5156

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3094 Date Analyzed: 09/24/02 22:55  
 Lab Samp ID: I146-05 Dilution Factor: 1  
 Lab File ID: SI24021A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 6.2  
 Calib. Ref.: SI24006A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.053	.018 .018
PCB-1221	(ND) ND	.053	.018 .018
PCB-1232	(ND) ND	.053	.018 .018
PCB-1242	(ND) ND	.053	.018 .018
PCB-1248	(ND) ND	.053	.018 .018
PCB-1254	(ND) ND	.053	.018 .018
PCB-1260	(ND) ND	.053	.018 .018

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(90) 87	35-135
DECACHLOROBIPHENYL	(98) 91	25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No. : 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3095 Date Analyzed: 09/24/02 23:20  
 Lab Samp ID: I146-06 Dilution Factor: 1  
 Lab File ID: SI24022A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 10.6  
 Calib. Ref.: SI24006A Instrument ID : GCT008  
=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.056	.019   .019
PCB-1221	(ND)	ND	.056	.019   .019
PCB-1232	(ND)	ND	.056	.019   .019
PCB-1242	(ND)	ND	.056	.019   .019
PCB-1248	(ND)	ND	.056	.019   .019
PCB-1254	(ND)	ND	.056	.019   .019
PCB-1260	(ND)	ND	.056	.019   .019
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(86)	83	35-135	
DECACHLOROBIPHENYL	(97)	90	25-143	

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 02I146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3096 Date Analyzed: 09/24/02 23:46  
 Lab Samp ID: I146-07 Dilution Factor: 1  
 Lab File ID: SI24023A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 13.0  
 Calib. Ref.: SI24006A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.057	.019   .019
PCB-1221	(ND)	ND	.057	.019   .019
PCB-1232	(ND)	ND	.057	.019   .019
PCB-1242	(ND)	ND	.057	.019   .019
PCB-1248	(ND)	ND	.057	.019   .019
PCB-1254	(ND)	ND	.057	.019   .019
PCB-1260	(ND)	ND	.057	.019   .019
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	(94)	89	35-135	
DECACHLOROBIPHENYL	(97)	89	25-143	

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW35508/8082

PCBs

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 021146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3100 Date Analyzed: 09/25/02 00:11  
 Lab Samp ID: I146-11 Dilution Factor: 1  
 Lab File ID: SI24024A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 6.3  
 Calib. Ref.: SI24006A Instrument ID : GCT008  
=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.053	.018
PCB-1221	(ND)	ND	.053	.018
PCB-1232	(ND)	ND	.053	.018
PCB-1242	(ND)	ND	.053	.018
PCB-1248	(ND)	ND	.053	.018
PCB-1254	(ND)	ND	.053	.018
PCB-1260	(ND)	ND	.053	.018

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(94) 90	35-135
DECACHLOROBIPHENYL	(94) 87	25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

() included the reported column

\* Out side of QC Limit

5160

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No.: 021146 Date Extracted: 09/24/02 16:30  
 Sample ID: 818655-B3101 Date Analyzed: 09/25/02 00:36  
 Lab Samp ID: I146-12 Dilution Factor: 1  
 Lab File ID: SI24025A Matrix : SOIL  
 Ext Btch ID: CPI038S % Moisture : 7.3  
 Calib. Ref.: SI24006A Instrument ID : GCT008  
=====

PARAMETERS	RESULTS		RL (mg/kg)	MDL (mg/kg)
	(ND)	ND		
PCB-1016	(ND)	ND	.054	.018   .018
PCB-1221	(ND)	ND	.054	.018   .018
PCB-1232	(ND)	ND	.054	.018   .018
PCB-1242	(ND)	ND	.054	.018   .018
PCB-1248	(ND)	ND	.054	.018   .018
PCB-1254	(ND)	ND	.054	.018   .018
PCB-1260	(ND)	ND	.054	.018   .018

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(79)   75	35-135
DECACHLOROBIPHENYL	(92)   86	25-143

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 Batch No. : 021146 Date Extracted: 09/24/02 12:00  
 Sample ID: 818655-B3102 Date Analyzed: 09/24/02 19:07  
 Lab Samp ID: I146-13 Dilution Factor: .97  
 Lab File ID: S124012A Matrix : WATER  
 Ext Btch ID: CP1037W % Moisture : NA  
 Calib. Ref.: S124006A Instrument ID : GCT008
 =====

PARAMETERS	RESULTS		RL (ug/L)	MDL (ug/L)
	(ND)	ND		
PCB-1016	(ND)	ND	.97	.24
PCB-1221	(ND)	ND	.97	.24
PCB-1232	(ND)	ND	.97	.24
PCB-1242	(ND)	ND	.97	.24
PCB-1248	(ND)	ND	.97	.24
PCB-1254	(ND)	ND	.97	.24
PCB-1260	(ND)	ND	.97	.24

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(96)   94	45-125
DECACHLOROBIPHENYL	(109)   105	34-133

RL: Reporting Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

METHOD 3050B/6010B  
METALS BY ICP

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
SDG NO.: 02I146 Date Extracted: 09/23/02 16:55
Sample ID: 818655-B3091 Date Analyzed: 09/25/02 22:35
Lab Samp ID: 1146-02 Dilution Factor: 1
Lab File ID: 173I022033 Matrix : SOIL
Ext Btch ID: IPI052S % Moisture : 8.5
Calib. Ref.: 173I022030 Instrument ID : EMAXT173
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	13700	54.6	4.9
Antimony	2.46J	5.46	2.3
Arsenic	2.38	1.09	.23
Barium	88.6	1.09	.136
Beryllium	ND	.219	.129
Cadmium	.538J	.546	.396
Calcium	3940	109	7.43
Chromium	14.4	2.19	.671
Cobalt	4.47	1.09	.755
Copper	8.69	2.19	.516
Iron	14100	21.9	1.67
Lead	2.76	1.09	.19
Magnesium	5180	109	8.74
Manganese	249	2.19	.205
Molybdenum	.902J	5.46	.807
Nickel	11.2	2.19	.601
Potassium	2870	109	78.2
Selenium	1.97	1.09	.311
Silver	ND	2.19	.686
Sodium	181	109	7.66
Thallium	.767J	1.09	.333
Vanadium	37.1	2.19	.479
Zinc	41	1.09	.315

RL: Reporting Limit

7003

METHOD 3050B/6010B  
METALS BY ICP

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 SDG NO. : 02I146 Date Extracted: 09/23/02 16:55
 Sample ID: 818655-B3092 Date Analyzed: 09/25/02 22:42
 Lab Samp ID: I146-03 Dilution Factor: 1
 Lab File ID: I73I022034 Matrix : SOIL
 Ext Btch ID: IPI052S % Moisture : 9.2
 Calib. Ref.: I73I022030 Instrument ID : EMAXTI73
 =====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	12100	55.1	4.94
Antimony	ND	5.51	2.32
Arsenic	2.55	1.1	.231
Barium	99.5	1.1	.137
Beryllium	ND	.22	.13
Cadmium	ND	.551	.399
Calcium	3820	110	7.48
Chromium	11.7	2.2	.676
Cobalt	4.1	1.1	.761
Copper	6.7	2.2	.52
Iron	12800	22	1.68
Lead	2.78	1.1	.192
Magnesium	5080	110	8.8
Manganese	179	2.2	.207
Molybdenum	ND	5.51	.813
Nickel	8.75	2.2	.606
Potassium	1730	110	78.8
Selenium	2.15	1.1	.314
Silver	ND	2.2	.692
Sodium	199	110	7.72
Thallium	.34J	1.1	.336
Vanadium	34	2.2	.482
Zinc	35.6	1.1	.317

RL: Reporting Limit

7004

METHOD 3050B/6010B  
METALS BY ICP

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 SDG NO. : 021146 Date Extracted: 09/23/02 16:55  
 Sample ID: 818655-B3093 Date Analyzed: 09/25/02 22:49  
 Lab Samp ID: I146-04 Dilution Factor: 1  
 Lab File ID: I73I022035 Matrix : SOIL  
 Ext Btch ID: IPI052S % Moisture : 8.2  
 Calib. Ref.: I73I022030 Instrument ID : EMAXTI73
 =====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	8070	54.5	4.88
Antimony	ND	5.45	2.29
Arsenic	1.77	1.09	.229
Barium	70.7	1.09	.135
Beryllium	ND	.218	.129
Cadmium	.436	.545	.394
Calcium	2710	109	7.4
Chromium	9.03	2.18	.669
Cobalt	2.81	1.09	.753
Copper	5.85	2.18	.514
Iron	9320	21.8	1.66
Lead	2.26	1.09	.19
Magnesium	3310	109	8.71
Manganese	160	2.18	.205
Molybdenum	ND	5.45	.804
Nickel	7.48	2.18	.599
Potassium	1630	109	78
Selenium	1.36	1.09	.31
Silver	ND	2.18	.684
Sodium	92.7	109	7.63
Thallium	ND	1.09	.332
Vanadium	24.8	2.18	.477
Zinc	30.5	1.09	.314

RL: Reporting Limit

7005

METHOD 3050B/6010B  
METALS BY ICP

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
SDG NO.    : 02I146            Date Extracted: 09/23/02 16:55
Sample ID: 818655-B3094       Date Analyzed: 09/25/02 22:56
Lab Samp ID: I146-05         Dilution Factor: 1
Lab File ID: I73I022036       Matrix        : SOIL
Ext Btch ID: IPI052S         % Moisture    : 6.2
Calib. Ref.: I73I022030       Instrument ID: EMAXT173
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	6500	53.3	4.78
Antimony	ND	5.33	2.24
Arsenic	1.64	1.07	.224
Barium	65.1	1.07	.132
Beryllium	ND	.213	.126
Cadmium	ND	.533	.386
Calcium	2790	107	7.25
Chromium	7.69	2.13	.655
Cobalt	2.65	1.07	.737
Copper	5.07	2.13	.503
Iron	8720	21.3	1.63
Lead	2.21	1.07	.186
Magnesium	3180	107	8.52
Manganese	147	2.13	.2
Molybdenum	ND	5.33	.787
Nickel	6.93	2.13	.586
Potassium	1320	107	76.3
Selenium	1.37	1.07	.304
Silver	ND	2.13	.67
Sodium	112	107	7.47
Thallium	ND	1.07	.325
Vanadium	21.8	2.13	.467
Zinc	28.3	1.07	.307

RL: Reporting Limit

7006

METHOD 3050B/6010B  
METALS BY ICP

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
SDG NO.     : 02I146           Date Extracted: 09/23/02 16:55
Sample ID: 818655-B3095       Date Analyzed: 09/25/02 23:03
Lab Samp ID: I146-06          Dilution Factor: 1
Lab File ID: I73I022037       Matrix        : SOIL
Ext Btch ID: IPI052S          % Moisture    : 10.6
Calib. Ref.: I73I022030       Instrument ID: EMAXTI73
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	13900	55.9	5.01
Antimony	ND	5.59	2.35
Arsenic	2.87	1.12	.235
Barium	108	1.12	.139
Beryllium	ND	.224	.132
Cadmium	.614	.559	.405
Calcium	8710	112	7.6
Chromium	13.7	2.24	.687
Cobalt	4.25	1.12	.773
Copper	8.51	2.24	.528
Iron	14100	22.4	1.71
Lead	3.02	1.12	.195
Magnesium	6090	112	8.94
Manganese	209	2.24	.21
Molybdenum	ND	5.59	.826
Nickel	10.5	2.24	.615
Potassium	2420	112	80
Selenium	2.18	1.12	.319
Silver	ND	2.24	.702
Sodium	165	112	7.84
Thallium	ND	1.12	.341
Vanadium	37.9	2.24	.49
Zinc	42.7	1.12	.322

RL: Reporting Limit

7007

METHOD 3050B/6010B  
METALS BY ICP

=====
 Client : SHAW E&I Date Collected: 09/19/02
 Project : CTO 0024, EL TORO Date Received: 09/19/02
 SDG NO. : 021146 Date Extracted: 09/23/02 16:55
 Sample ID: 818655-B3096 Date Analyzed: 09/25/02 23:10
 Lab Samp ID: I146-07 Dilution Factor: 1
 Lab File ID: I731022038 Matrix : SOIL
 Ext Btch ID: IPI052S % Moisture : 13.0
 Calib. Ref.: I731022030 Instrument ID : EMAXT173
 =====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	12000	57.5	5.15
Antimony	ND	5.75	2.42
Arsenic	3.23	1.15	.241
Barium	103	1.15	.143
Beryllium	ND	.23	.136
Cadmium	.8	.575	.416
Calcium	8390	115	7.81
Chromium	12.3	2.3	.706
Cobalt	5.08	1.15	.794
Copper	8.01	2.3	.543
Iron	13600	23	1.75
Lead	3.06	1.15	.2
Magnesium	5800	115	9.19
Manganese	227	2.3	.216
Molybdenum	.848J	5.75	.848
Nickel	10.5	2.3	.632
Potassium	2300	115	82.3
Selenium	1.81	1.15	.328
Silver	ND	2.3	.722
Sodium	128	115	8.06
Thallium	ND	1.15	.351
Vanadium	36.3	2.3	.503
Zinc	42.8	1.15	.331

RL: Reporting Limit

7008

METHOD 3050B/6010B  
METALS BY ICP

```
=====
Client : SHAW E&I Date Collected: 09/19/02
Project : CTO 0024, EL TORO Date Received: 09/19/02
SDG NO. : 021146 Date Extracted: 09/23/02 16:55
Sample ID: 818655-B3100 Date Analyzed: 09/25/02 23:17
Lab Samp ID: I146-11 Dilution Factor: 1
Lab File ID: I731022039 Matrix : SOIL
Ext Btch ID: IPI052S % Moisture : 6.3
Calib. Ref.: I731022030 Instrument ID : EMAXTI73
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	6090	53.4	4.78
Antimony	ND	5.34	2.24
Arsenic	1.24	1.07	.224
Barium	90.4	1.07	.132
Beryllium	ND	.213	.126
Cadmium	ND	.534	.386
Calcium	2370	107	7.25
Chromium	6.43	2.13	.655
Cobalt	2.85	1.07	.737
Copper	4.29	2.13	.504
Iron	8600	21.3	1.63
Lead	1.68	1.07	.186
Magnesium	3250	107	8.53
Manganese	164	2.13	.201
Molybdenum	ND	5.34	.788
Nickel	4.23	2.13	.587
Potassium	2240	107	76.4
Selenium	1.64	1.07	.304
Silver	ND	2.13	.67
Sodium	116	107	7.48
Thallium	ND	1.07	.326
Vanadium	20.3	2.13	.467
Zinc	26.2	1.07	.307

RL: Reporting Limit

7009

METHOD 3050B/6010B  
METALS BY ICP

=====
 Client : SHAW E&I Date Collected: 09/19/02  
 Project : CTO 0024, EL TORO Date Received: 09/19/02  
 SDG NO.: 02I146 Date Extracted: 09/23/02 16:55  
 Sample ID: 818655-B3101 Date Analyzed: 09/25/02 23:24  
 Lab Samp ID: I146-12 Dilution Factor: 1  
 Lab File ID: I731022040 Matrix : SOIL  
 Ext Btch ID: IPI052S % Moisture : 7.3  
 Calib. Ref.: I731022030 Instrument ID : EMAXI73

=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	8640	53.9	4.83
Antimony	ND	5.39	2.27
Arsenic	1.94	1.08	.227
Barium	120	1.08	.134
Beryllium	ND	.216	.127
Cadmium	ND	.539	.391
Calcium	5720	108	7.33
Chromium	8.67	2.16	.662
Cobalt	3.98	1.08	.745
Copper	5.81	2.16	.509
Iron	12000	21.6	1.65
Lead	1.54	1.08	.188
Magnesium	5040	108	8.62
Manganese	210	2.16	.203
Molybdenum	ND	5.39	.796
Nickel	5.32	2.16	.593
Potassium	3140	108	77.2
Selenium	1.92	1.08	.307
Silver	ND	2.16	.677
Sodium	141	108	7.56
Thallium	ND	1.08	.329
Vanadium	29	2.16	.472
Zinc	35.1	1.08	.311

RL: Reporting Limit

7010

METHOD 3010A/6010B  
METALS BY ICP

```
=====
Client      : SHAW E&I          Date Collected: 09/19/02
Project     : CTO 0024, EL TORO   Date Received: 09/19/02
SDG NO.    : 02I146            Date Extracted: 09/23/02 15:45
Sample ID: 818655-B3102        Date Analyzed: 09/25/02 21:31
Lab Samp ID: 1146-13          Dilution Factor: 1
Lab File ID: I73I022024       Matrix      : WATER
Ext Btch ID: IPI051W          % Moisture   : NA
Calib. Ref.: I73I022018        Instrument ID : EMAXTI73
=====
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	500	61
Antimony	ND	500	40
Arsenic	ND	5	4
Barium	ND	100	2
Beryllium	ND	10	1.0
Cadmium	ND	5	2
Calcium	88.2J	1000	32
Chromium	ND	50	6
Cobalt	ND	50	11
Copper	ND	50	5
Iron	ND	1000	25
Lead	ND	5	2
Magnesium	ND	1000	54
Manganese	ND	20	3
Molybdenum	ND	100	7
Nickel	ND	150	10
Potassium	ND	5000	750
Selenium	ND	5	5
Silver	ND	50	11
Sodium	380J	1000	70
Thallium	ND	10	6
Vanadium	ND	100	5
Zinc	ND	20	5

RL: Reporting Limit

7011

METHOD 7470A  
MERCURY BY COLD VAPOR

Client : SHAW E&I  
Project : CTO 0024, EL TORO  
Batch No. : 021146

Matrix : WATER  
Instrument ID : T1047

EMAX	SAMPLE ID	RESULTS (ug/L)	RL	MDL	Analysis (ug/L)	Extraction DATETIME	L FID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
NBLK1W	HGI045WB	ND	1	NA	.2	.1	09/24/0210:26	09/23/0217:35	M741022011	M741022009	HGI045W
LCS1W	HGI045WL	4.77	1	NA	.2	.1	09/24/0210:28	09/23/0217:35	M741022012	M741022009	HGI045W
LCD1W	HGI045WC	4.86	1	NA	.2	.1	09/24/0210:30	09/23/0217:35	M741022013	M741022009	HGI045W
818655-B3102	I146-13	.113J	1	NA	.2	.1	09/24/0210:47	09/23/0217:35	M741022020	M741022009	HGI045W
											09/19/02

RL: Reporting Limit

7029

**METHOD 7471A**  
**MERCURY BY COLD VAPOR**

Client : SHAW E&I  
 Project : CTO 0024, EL TORO  
 Batch No. : 021146

Matrix : SOIL  
 Instrument ID : T1047

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/kg)		RL	MDL NOIST (mg/kg)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
		DLF	NOIST (mg/kg)									
MBLK1S	HG1044SB	ND	1	NA	.1	09/23/0216:36	09/23/0214:50	M741021048	M741021046	HG1044S	09/23/02	09/23/02
LCS1S	HG1044SL	.892	1	NA	.1	09/23/0216:38	09/23/0214:50	M741021049	M741021046	HG1044S	NA	09/23/02
LCD1S	HG1044SC	.89	1	NA	.1	09/23/0216:41	09/23/0214:50	M741021050	M741021046	HG1044S	NA	09/23/02
818655-B3091DL	I146-02T	ND	5	8.5	.546	09/23/0216:43	09/23/0214:50	M741021051	M741021046	HG1044S	09/19/02	09/19/02
818655-B3091	I146-02	ND	1	8.5	.109	09/23/0216:47	09/23/0214:50	M741021052	M741021046	HG1044S	09/19/02	09/19/02
818655-B3091AS	I146-02A	.348	1	8.5	.109	09/23/0216:49	09/23/0214:50	M741021053	M741021046	HG1044S	09/19/02	09/19/02
818655-B3092	I146-03	ND	1	9.2	.11	09/23/0216:51	09/23/0214:50	M741021054	M741021046	HG1044S	09/19/02	09/19/02
818655-B3093	I146-04	ND	1	8.2	.109	09/23/0216:55	09/23/0214:50	M741021055	M741021046	HG1044S	09/19/02	09/19/02
818655-B3094	I146-05	ND	1	6.2	.107	09/23/0216:57	09/23/0214:50	M741021056	M741021046	HG1044S	09/19/02	09/19/02
818655-B3095	I146-06	ND	1	10.6	.112	09/23/0216:59	09/23/0214:50	M741021060	M741021058	HG1044S	09/19/02	09/19/02
818655-B3096	I146-07	ND	1	13.0	.115	09/23/0217:03	09/23/0214:50	M741021061	M741021058	HG1044S	09/19/02	09/19/02
818655-B3100	I146-11	ND	1	6.3	.107	09/23/0217:11	09/23/0214:50	M741021062	M741021058	HG1044S	09/19/02	09/19/02
818655-B3101	I146-12	ND	1	7.3	.108	09/23/0217:14	09/23/0214:50	M741021063	M741021058	HG1044S	09/19/02	09/19/02

RL: Reporting Limit

7030



## **APPENDIX H**

## **LDC REPORT**



**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24

**Collection Date:** September 19, 2002

**LDC Report Date:** October 8, 2002

**Matrix:** Soil/Water

**Parameters:** Volatiles

**Validation Level:** EPA Level III

**Laboratory:** EMAX Laboratories, Inc.

**Sample Delivery Group (SDG):** 02I146

**Sample Identification**

818655-B3090

818655-B3091

818655-B3092

818655-B3093

818655-B3094

818655-B3095

818655-B3096

818655-B3100

818655-B3101

818655-B3102

## Introduction

This data review covers 8 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U      Indicates the compound or analyte was analyzed for but not detected at or above the stated limit
- J      Indicates an estimated value
- R      Quality control indicates the data is not usable.
- N      Presumptive evidence of presence of the constituent
- UJ     Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value
- A      Indicates the finding is based upon technical validation criteria
- P      Indicates the finding is related to a protocol/contractual deviation.
- None    Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodices were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria

## **II. GC/MS Instrument Performance Check**

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

## **III. Initial Calibration**

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs)

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

All of the continuing calibration RRF values were within method and validation criteria.

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
VOO6157Q	9/22/02	Methylene chloride	2.3 ug/L	All water samples in SDG 02I146

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
818655-B3090	Methylene chloride	2.1 ug/L	5.0 ug/L

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits

## **IX. Regional Quality Assurance and Quality Control**

Not applicable.

## **X. Internal Standards**

All internal standard areas and retention times were within QC limits

## **XI. Target Compound Identifications**

Raw data were not reviewed for this SDG.

## **XII. Compound Quantitation and CRQLs**

Raw data were not reviewed for this SDG

## **XIII. Tentatively Identified Compounds (TICs)**

Raw data were not reviewed for this SDG

## **XIV. System Performance**

Raw data were not reviewed for this SDG

## **XV. Overall Assessment of Data**

Data flags have been summarized at the end of the report.

## **XVI. Field Duplicates**

No field duplicates were identified in this SDG

## **XVII. Field Blanks**

Sample 818655-B3090 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Compound	Concentration (ug/L)
818655-B3090	Methylene chloride	21

Sample 818655-B3102 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

**MCAS EI Toro, CTO 24**  
**Volatiles - Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

**MCAS EI Toro, CTO 24**  
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 02I146**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02I146	818655-B3090	Methylene chloride	5U ug/L	A

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24

**Collection Date:** September 19, 2002

**LDC Report Date:** October 8, 2002

**Matrix:** Soil

**Parameters:** Semivolatiles

**Validation Level:** EPA Level III

**Laboratory:** EMAX Laboratories, Inc.

**Sample Delivery Group (SDG):** 02I146

**Sample Identification**

818655-B3091

818655-B3092

818655-B3093

818655-B3094

818655-B3095

818655-B3096

818655-B3100

818655-B3101

818655-B3101MS

818655-B3101MSD

## Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodices were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. GC/MS Instrument Performance Check**

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met

## **III. Initial Calibration**

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs)

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination ( $r^2$ ) were greater than or equal to 0.990 .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria

Average relative response factors (RRF) for all semivolatile target compounds and system performance check compounds (SPCCs) were greater than or equal to 0.05 as required.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs)

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

All of the continuing calibration RRF values were greater than or equal to 0.05 ..

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

## **VII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits

## **IX. Regional Quality Assurance and Quality Control**

Not applicable.

## **X. Internal Standards**

All internal standard areas and retention times were within QC limits.

## **XI. Target Compound Identifications**

Raw data were not reviewed for this SDG

## **XII. Compound Quantitation and CRQLs**

Raw data were not reviewed for this SDG

## **XIII. Tentatively Identified Compounds (TICs)**

Raw data were not reviewed for this SDG

## **XIV. System Performance**

Raw data were not reviewed for this SDG

## **XV. Overall Assessment**

Data flags have been summarized at the end of the report

## **XVI. Field Duplicates**

No field duplicates were identified in this SDG

## **XVII. Field Blanks**

No field blanks were identified in this SDG

**MCAS El Toro, CTO 24**

**Semivolatiles - Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

**MCAS El Toro, CTO 24**

**Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

## **Laboratory Data Consultants, Inc. Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24

**Collection Date:** September 19, 2002

**LDC Report Date:** October 8, 2002

**Matrix:** Soil/Water

**Parameters:** Chlorinated Pesticides

**Validation Level:** EPA Level III

**Laboratory:** EMAX Laboratories, Inc

**Sample Delivery Group (SDG):** 02|146

### **Sample Identification**

818655-B3091

818655-B3092

818655-B3093

818655-B3094

818655-B3095

818655-B3096

818655-B3100

818655-B3101

818655-B3102

818655-B3101MS

818655-B3101MSD

## **Introduction**

This data review covers 10 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U      Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J      Indicates an estimated value
- R      Quality control indicates the data is not usable
- N      Presumptive evidence of presence of the constituent
- UJ     Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A      Indicates the finding is based upon technical validation criteria.
- P      Indicates the finding is related to a protocol/contractual deviation.

None    Indicates the data was not significantly impacted by the finding, therefore qualification was not required

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. GC/ECD Instrument Performance Check**

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

## **III. Initial Calibration**

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
9/24/02	SI24003/4A	RTX-CLPEST	4,4'-DDE Endrin 4,4'-DDD Methoxychlor	20 18 25 15.03	All samples in SDG 021146	J (all detects) UJ (all non-detects)	A

The individual 4,4'-DDT and Endrin breakdowns were less than 15.0%.

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable Percent recoveries (%R) and relative percent differences (RPD) were within QC limits

## **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **IX. Regional Quality Assurance and Quality Control**

Not applicable.

## **X. Pesticide Cleanup Checks**

### **a. Florisil Cartridge Check**

Florisil cleanup was not required and therefore not performed in this SDG.

### **b. GPC Calibration**

GPC cleanup was not required and therefore not performed in this SDG.

## **XI. Target Compound Identification**

Raw data were not reviewed for this SDG

## **XII. Compound Quantitation and Reported CRQLs**

Raw data were not reviewed for this SDG.

## **XIII. Overall Assessment of Data**

Data flags are summarized at the end of this report.

## **XIV. Field Duplicates**

No field duplicates were identified in this SDG.

## **XV. Field Blanks**

Sample 818655-B3102 was identified as an equipment rinsate No chlorinated pesticide contaminants were found in this blank

**MCAS EI Toro, CTO 24****Chlorinated Pesticides - Data Qualification Summary - SDG 02I146**

SDG	Sample	Compound	Flag	A or P	Reason
02I146	818655-B3091 818655-B3092 818655-B3093 818655-B3094 818655-B3095 818655-B3096 818655-B3100 818655-B3101 818655-B3102	4,4'-DDE Endrin 4,4'-DDD Methoxychlor	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

**MCAS EI Toro, CTO 24****Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

## **Laboratory Data Consultants, Inc. Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24  
**Collection Date:** September 19, 2002  
**LDC Report Date:** October 8, 2002  
**Matrix:** Soil/Water  
**Parameters:** Polychlorinated Biphenyls  
**Validation Level:** EPA Level III  
**Laboratory:** EMAX Laboratories, Inc.  
**Sample Delivery Group (SDG):** 02I146

### **Sample Identification**

818655-B3091  
818655-B3092  
818655-B3093  
818655-B3094  
818655-B3095  
818655-B3096  
818655-B3100  
818655-B3101  
818655-B3102  
818655-B3101MS  
818655-B3101MSD

## **Introduction**

This data review covers 10 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data

The following are definitions of the data qualifiers:

- U      Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J      Indicates an estimated value.
- R      Quality control indicates the data is not usable
- N      Presumptive evidence of presence of the constituent.
- UJ     Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A      Indicates the finding is based upon technical validation criteria
- P      Indicates the finding is related to a protocol/contractual deviation.
- None    Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria

## **II. GC/ECD Instrument Performance Check**

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections

## **III. Initial Calibration**

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **IX. Regional Quality Assurance and Quality Control**

Not applicable.

## **X. Pesticide Cleanup Checks**

### **a. Florisil Cartridge Check**

Florisil cleanup was not required and therefore not performed in this SDG.

### **b. GPC Calibration**

GPC cleanup was not required and therefore not performed in this SDG.

## **XI. Target Compound Identification**

Raw data were not reviewed for this SDG

## **XII. Compound Quantitation and Reported CRQLs**

Raw data were not reviewed for this SDG

## **XIII. Overall Assessment of Data**

Data flags are summarized at the end of this report.

## **XIV. Field Duplicates**

No field duplicates were identified in this SDG.

## **XV. Field Blanks**

Sample 818655-B3102 was identified as an equipment rinsate. No polychlorinated biphenyl contaminants were found in this blank.

**MCAS EI Toro, CTO 24**

**Polychlorinated Biphenyls - Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

**MCAS EI Toro, CTO 24**

**Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24

**Collection Date:** September 19, 2002

**LDC Report Date:** October 8, 2002

**Matrix:** Soil/Water

**Parameters:** Metals

**Validation Level:** EPA Level III

**Laboratory:** EMAX Laboratories, Inc.

**Sample Delivery Group (SDG):** 02I146

**Sample Identification**

818655-B3091

818655-B3092

818655-B3093

818655-B3094

818655-B3095

818655-B3096

818655-B3100

818655-B3101

818655-B3102

ICS ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
ICSAB	Antimony	125 (80-120)	All samples in SDG 021146	None	P

## V. Matrix Spike Analysis

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

## VI. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

## VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG

## IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

## X. ICP Serial Dilution

Although ICP serial dilution analysis was not required by the method, it was performed by the laboratory. The analysis criteria were met.

## XI. Sample Result Verification

Raw data were not reviewed for this SDG.

## XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

## XIII. Field Duplicates

No field duplicates were identified in this SDG

#### XIV. Field Blanks

Sample 818655-B3102 was identified as an equipment rinsate. No metal contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Analyte	Concentration (ug/L)
818655-B3102	Mercury Calcium Sodium	0.113 88.2 380

**MCAS El Toro, CTO 24****Metals - Data Qualification Summary - SDG 02I146**

SDG	Sample	Analyte	Flag	A or P	Reason
02I146	818655-B3091 818655-B3092 818655-B3093 818655-B3094 818655-B3095 818655-B3096 818655-B3100 818655-B3101 818655-B3102	Antimony	None	P	ICP interference check sample analysis (%R)

**MCAS El Toro, CTO 24****Metals - Laboratory Blank Data Qualification Summary - SDG 02I146**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro, CTO 24  
**Collection Date:** September 19, 2002  
**LDC Report Date:** October 8, 2002  
**Matrix:** Soil/Water  
**Parameters:** Total Petroleum Hydrocarbons as Gasoline  
**Validation Level:** EPA Level III  
**Laboratory:** EMAX Laboratories, Inc  
**Sample Delivery Group (SDG):** 02|146

**Sample Identification**

818655-B3091  
818655-B3092  
818655-B3093  
818655-B3094  
818655-B3095  
818655-B3096  
818655-B3100  
818655-B3101  
818655-B3102

## Introduction

This data review covers 8 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 for Total Petroleum Hydrocarbons (TPH) as Gasoline

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U     Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J     Indicates an estimated value.
- R     Quality control indicates the data is not usable.
- N     Presumptive evidence of presence of the constituent
- UJ    Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value
- A     Indicates the finding is based upon technical validation criteria.
- P     Indicates the finding is related to a protocol/contractual deviation.

None    Indicates the data was not significantly impacted by the finding, therefore qualification was not required